

458/497

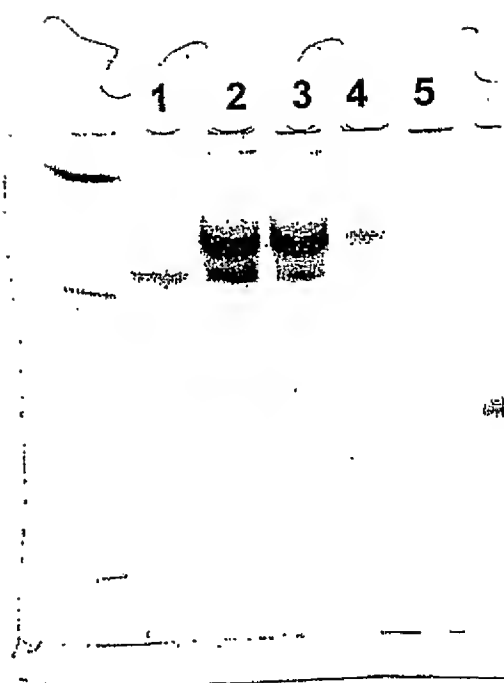


FIG. 157

459/497

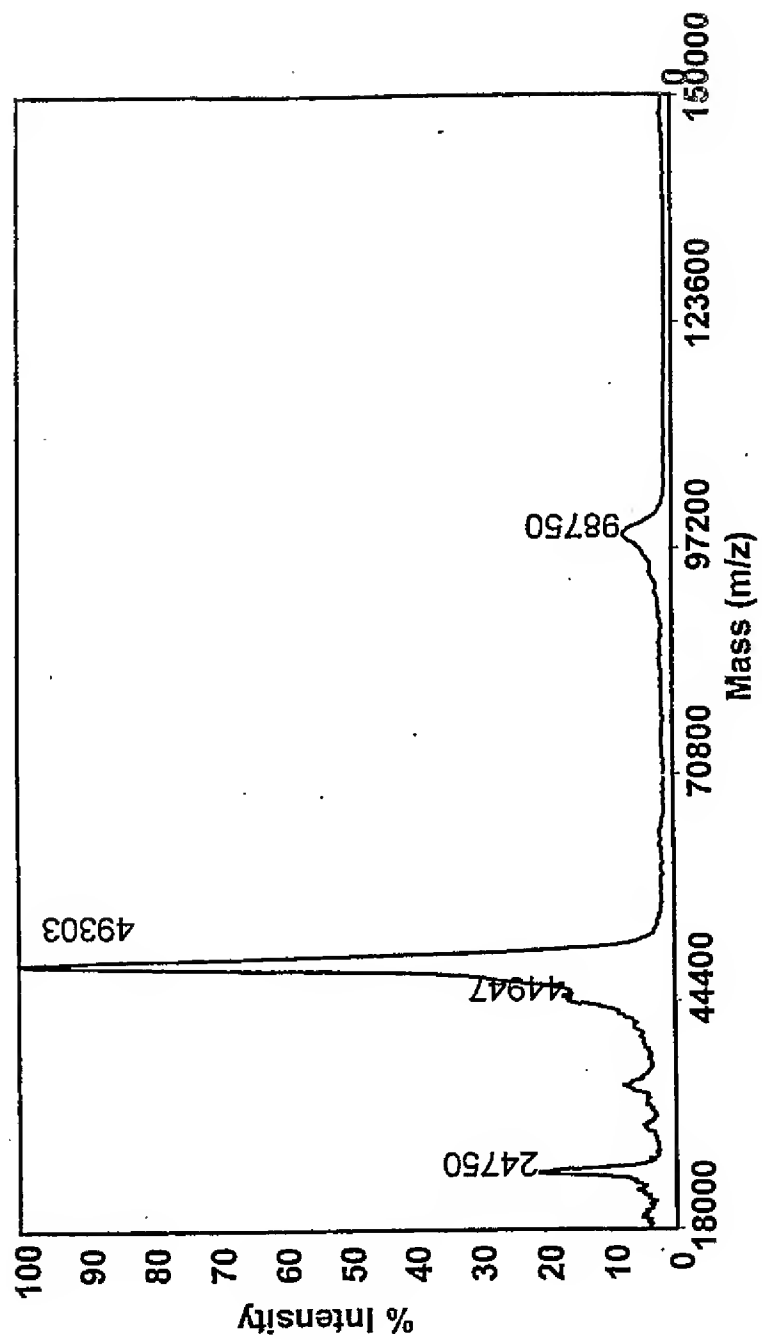


FIG. 158

460/497

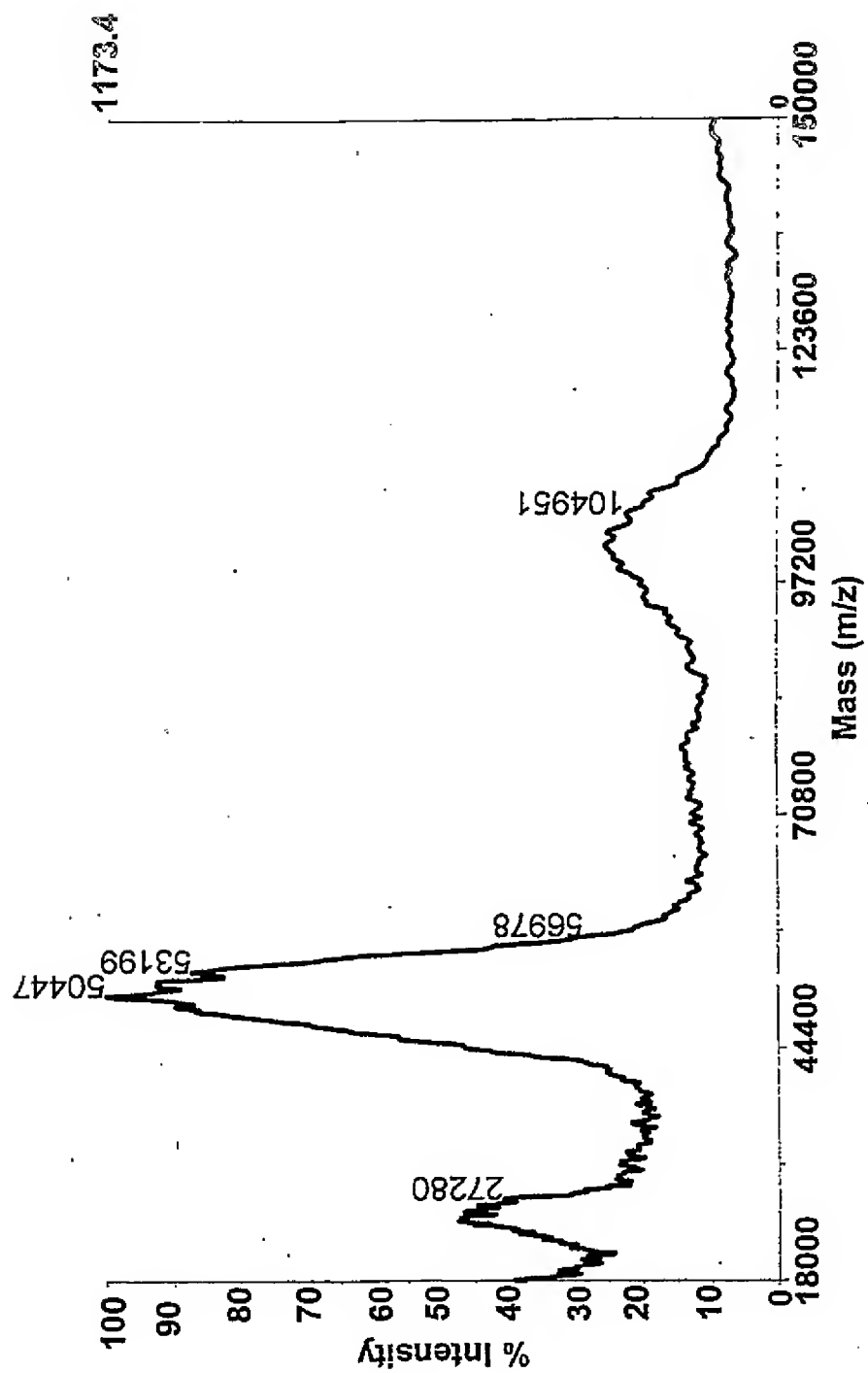


FIG. 159

461/497

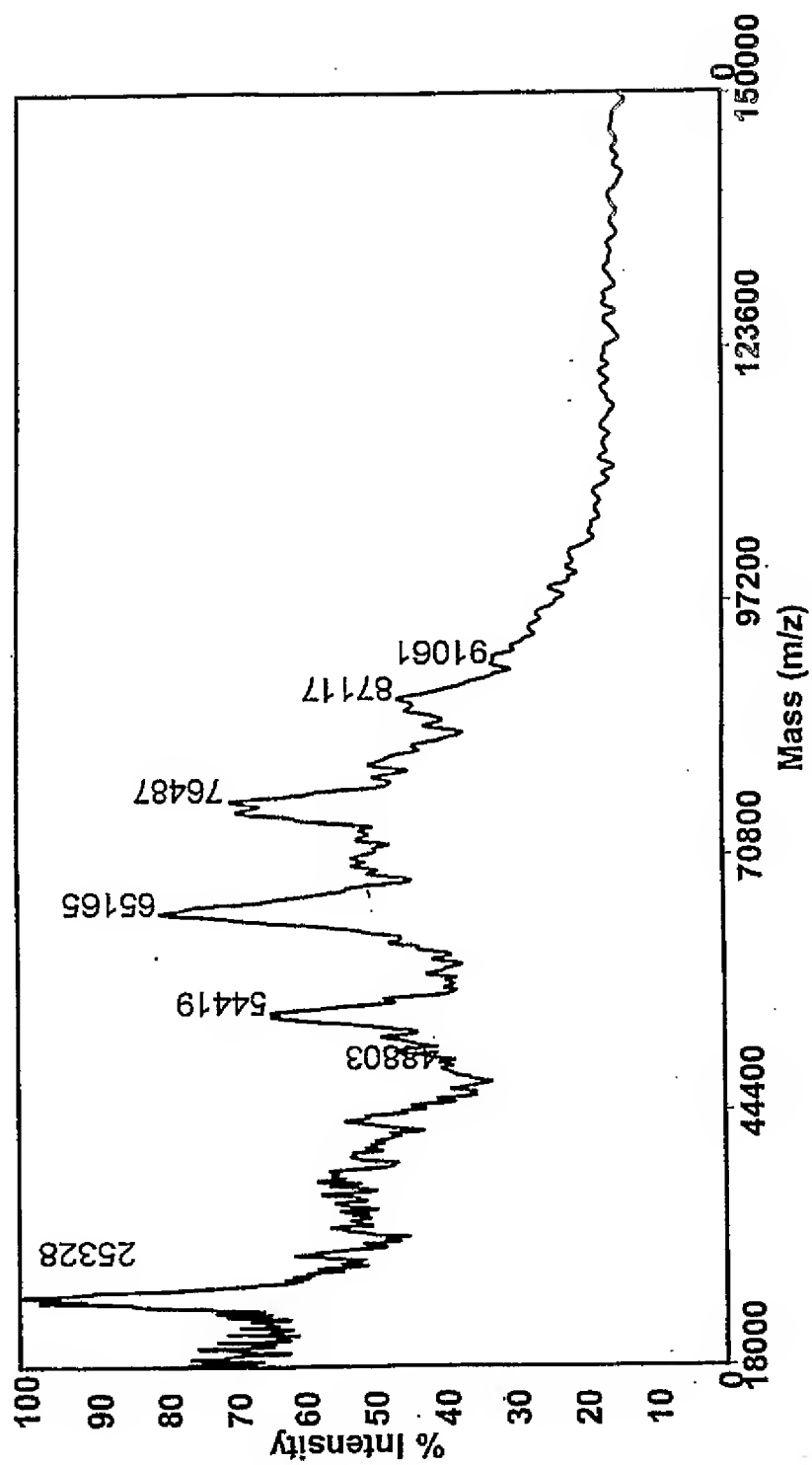


FIG. 160

462/497



FIG. 161

463/497

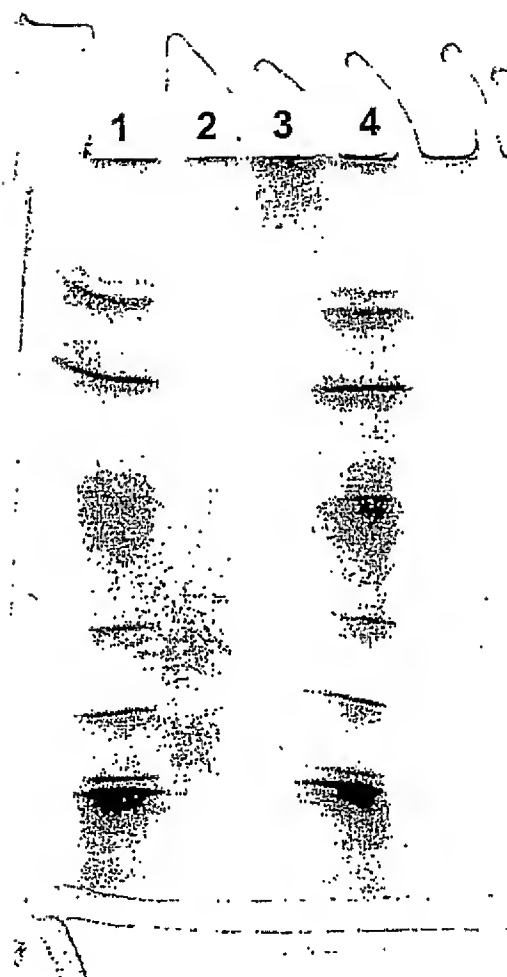


FIG. 162

464/497

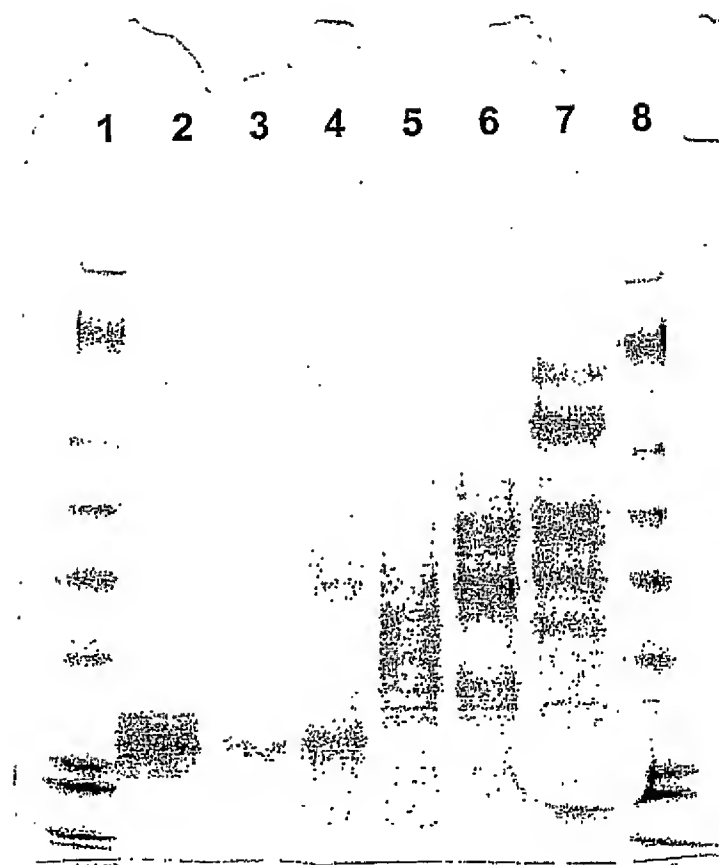


FIG. 163

465/497



FIG. 164

466/497

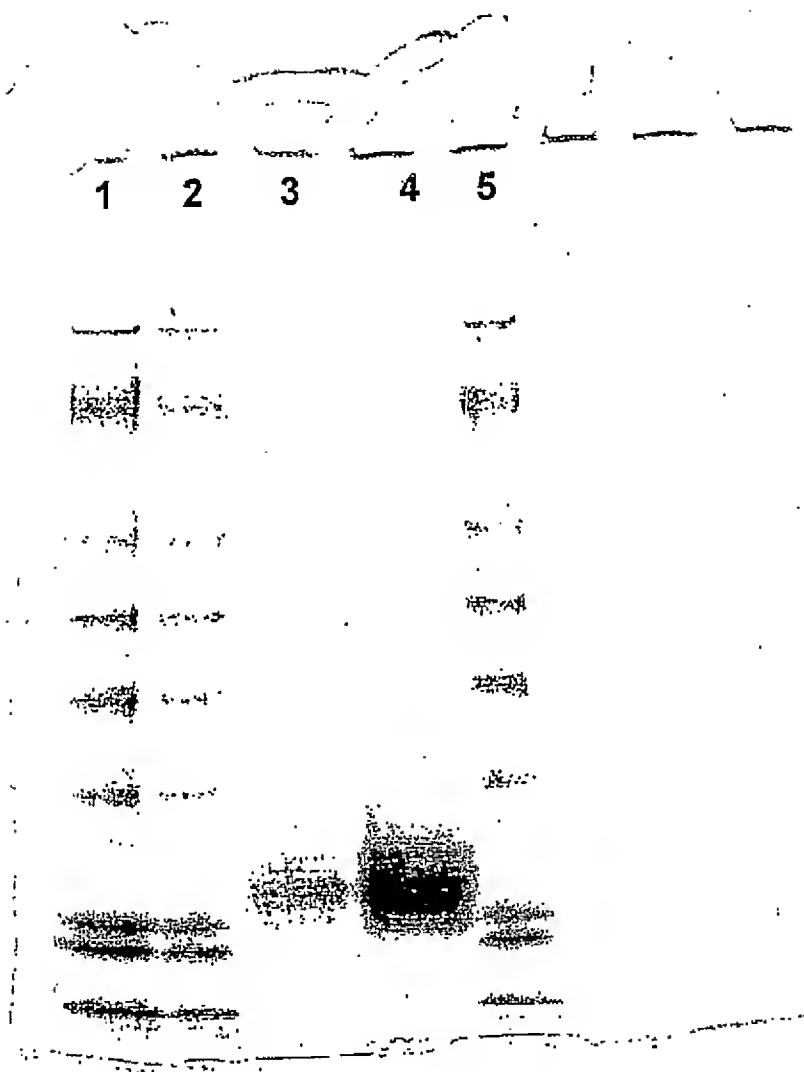


FIG. 165

467/497

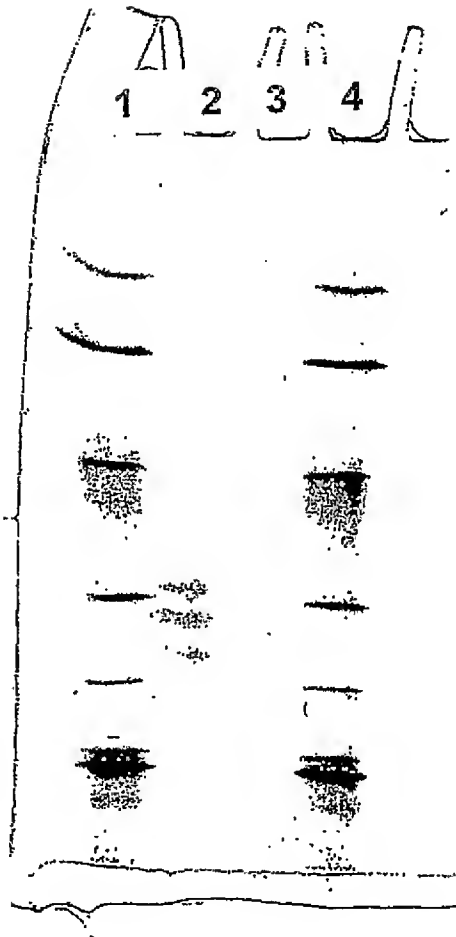


FIG. 166

468/497

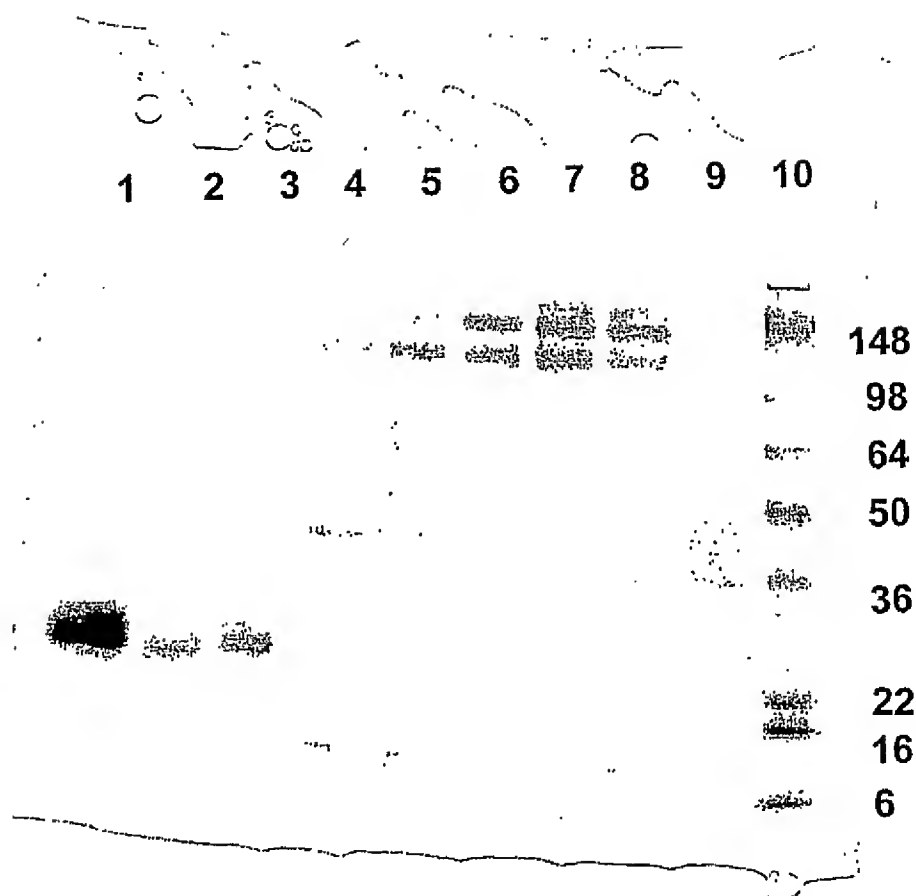


FIG. 167

469/497

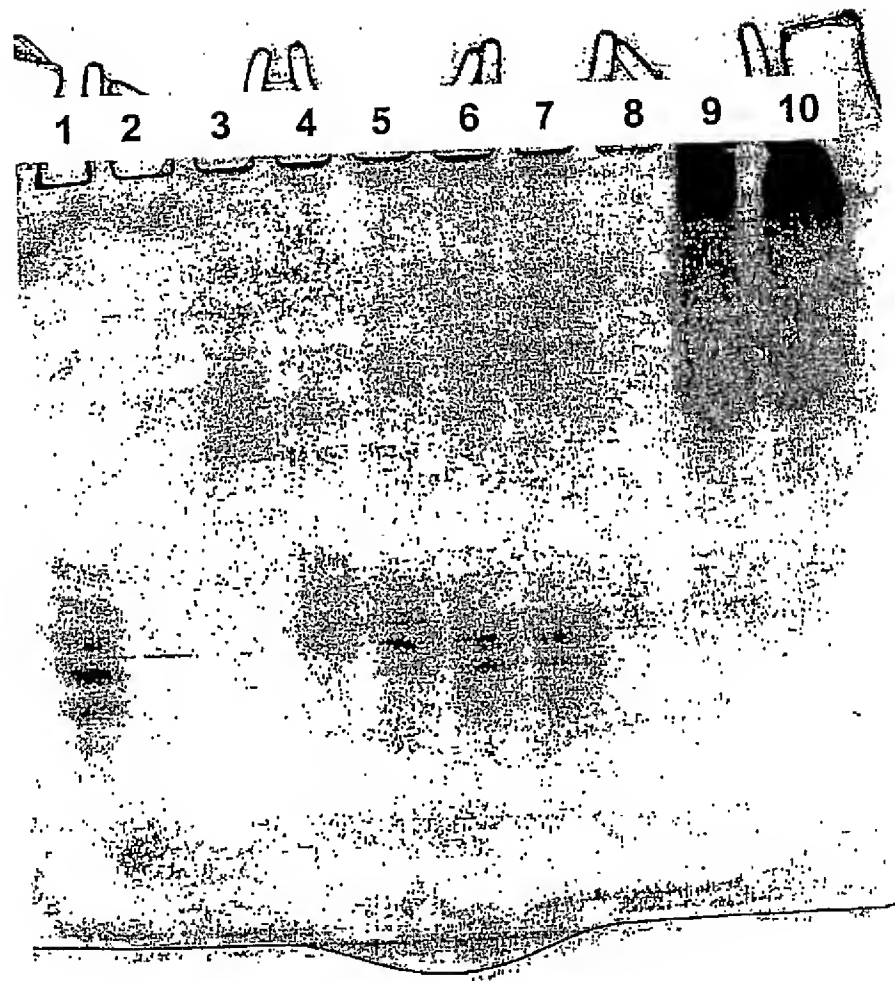


FIG. 168

470/497

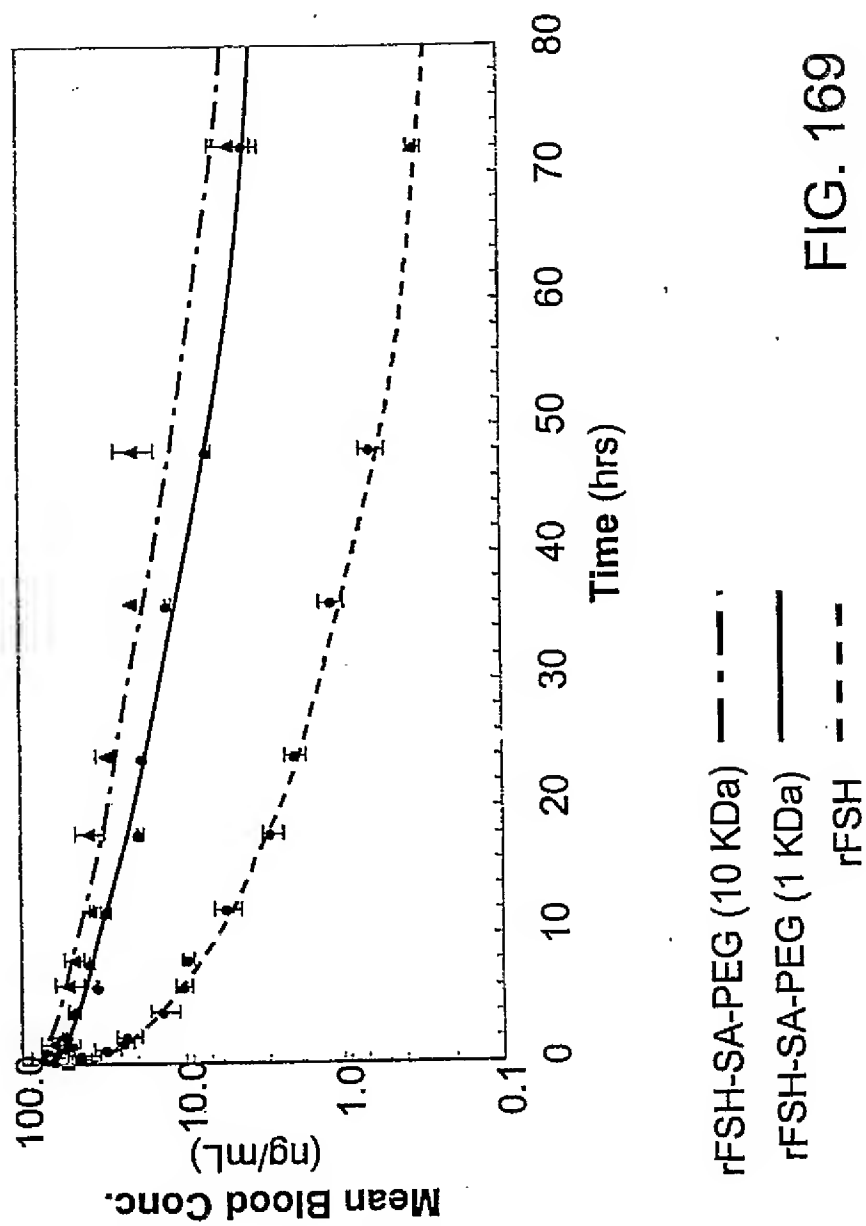


FIG. 169

471/497

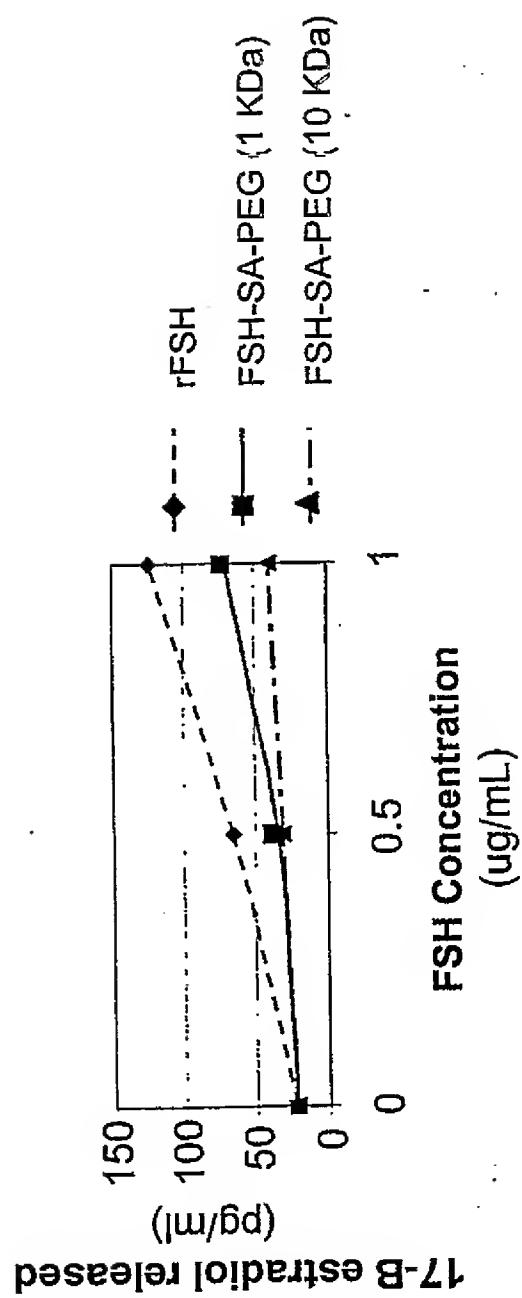


FIG. 170

472/497

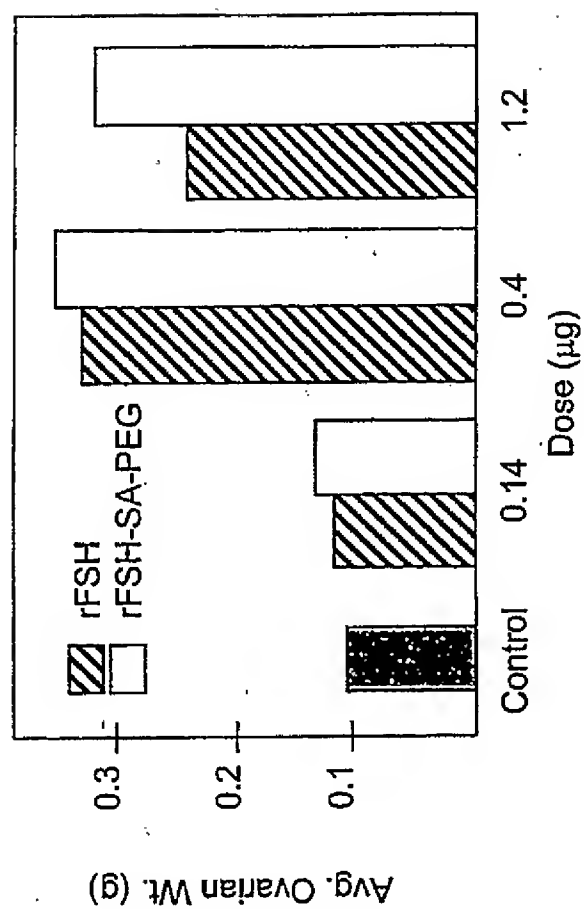


FIG. 171

473/497

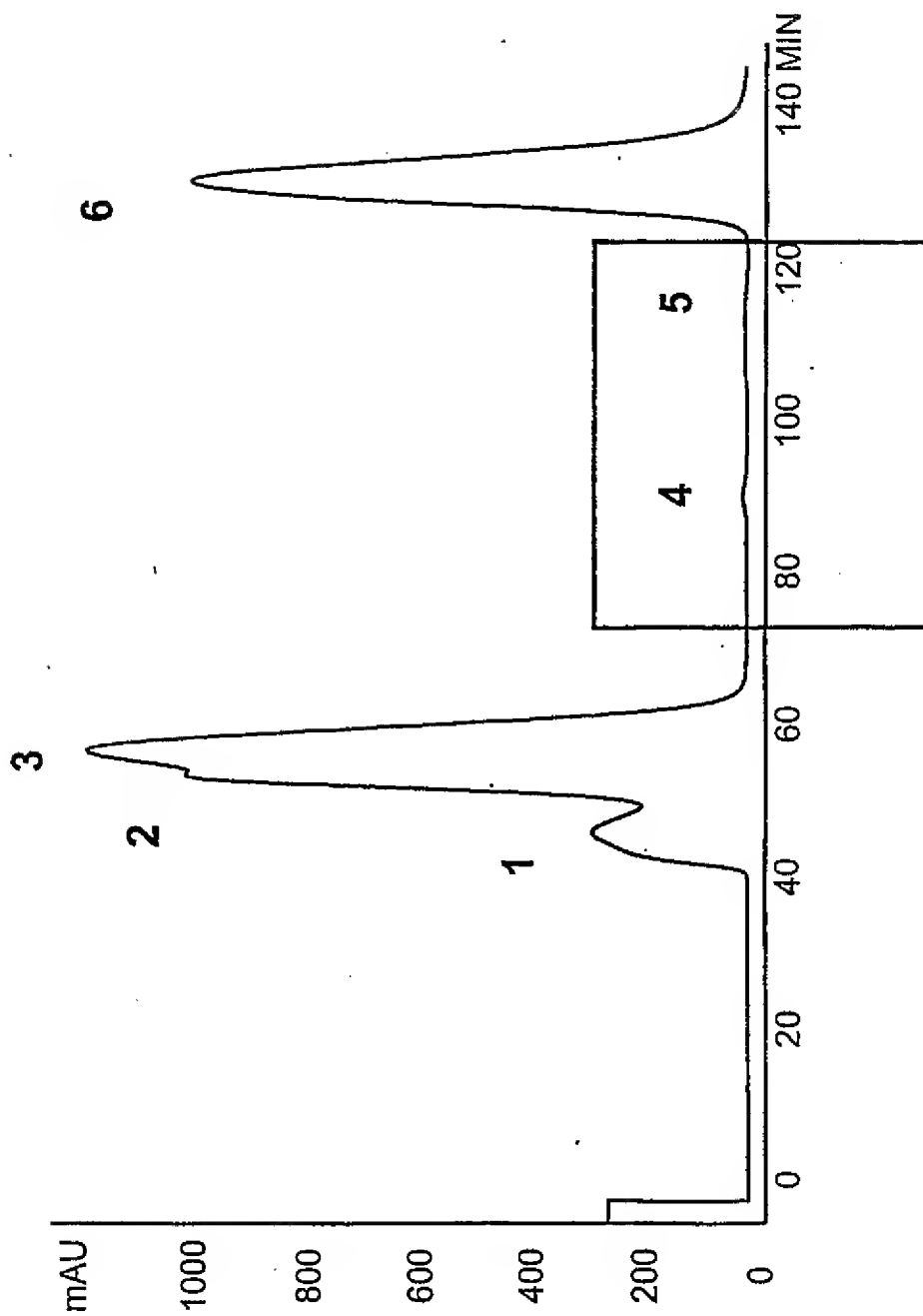


FIG. 172A

474/497

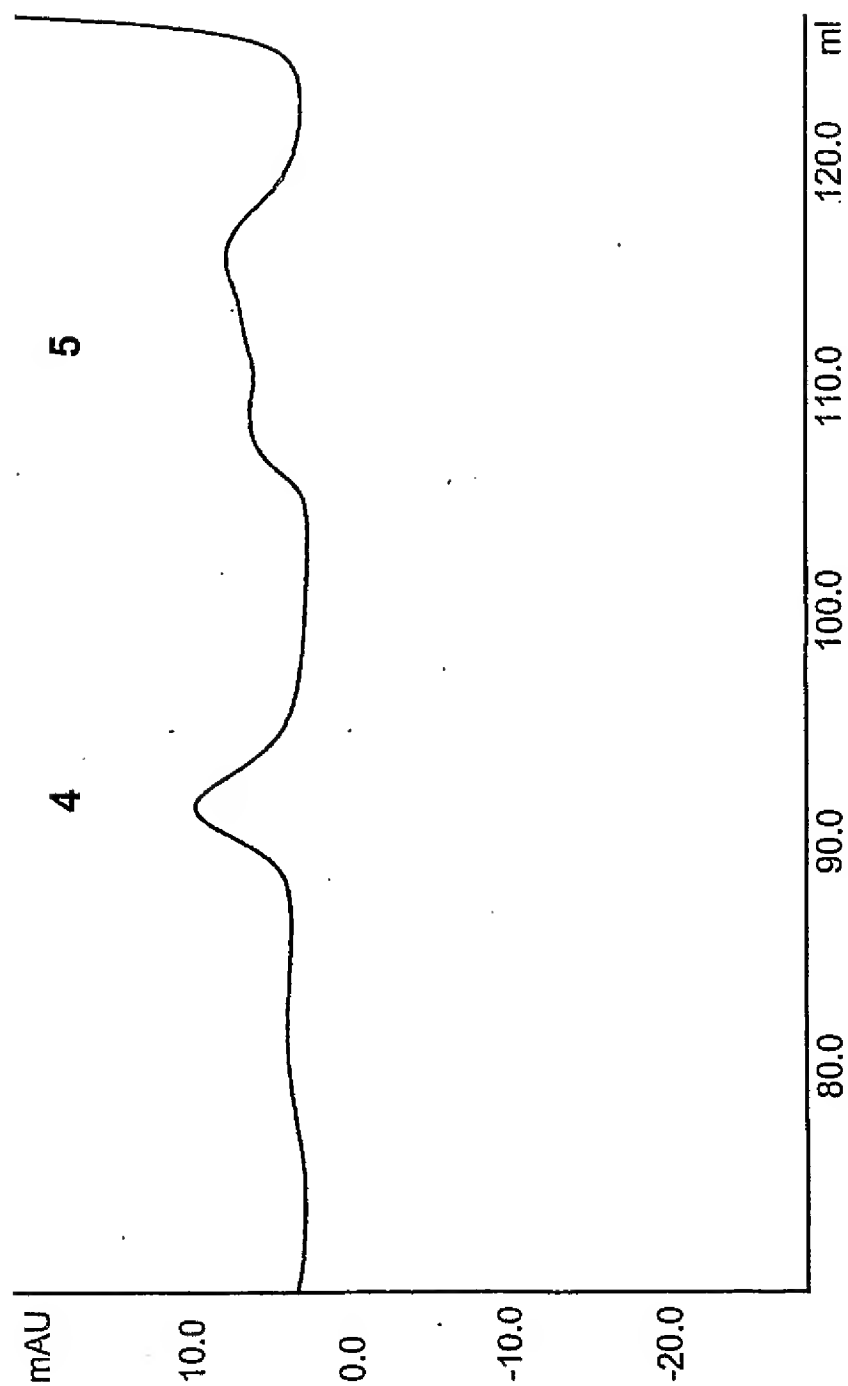


FIG. 172B

475/497

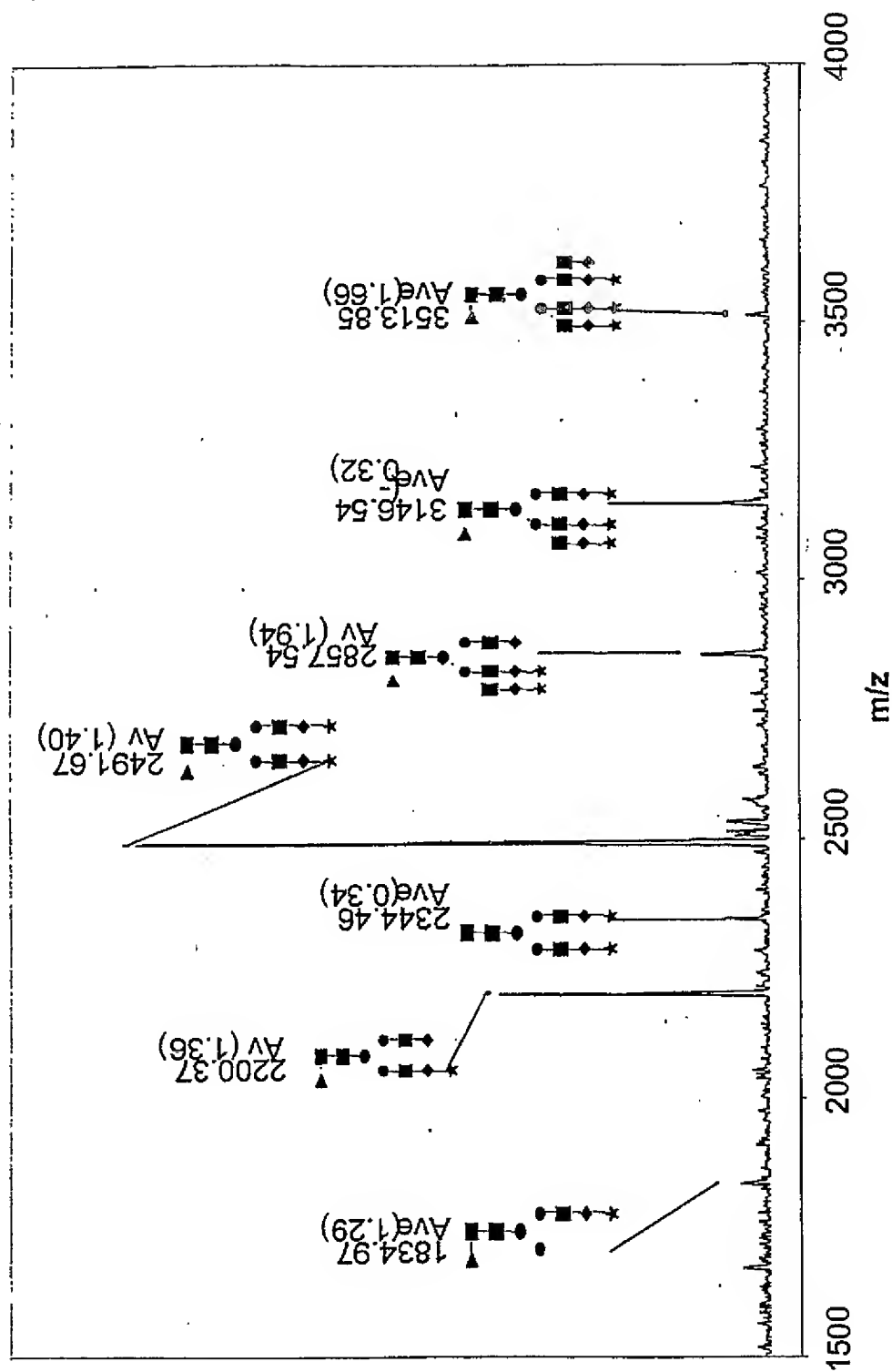


FIG. 173A

476/497

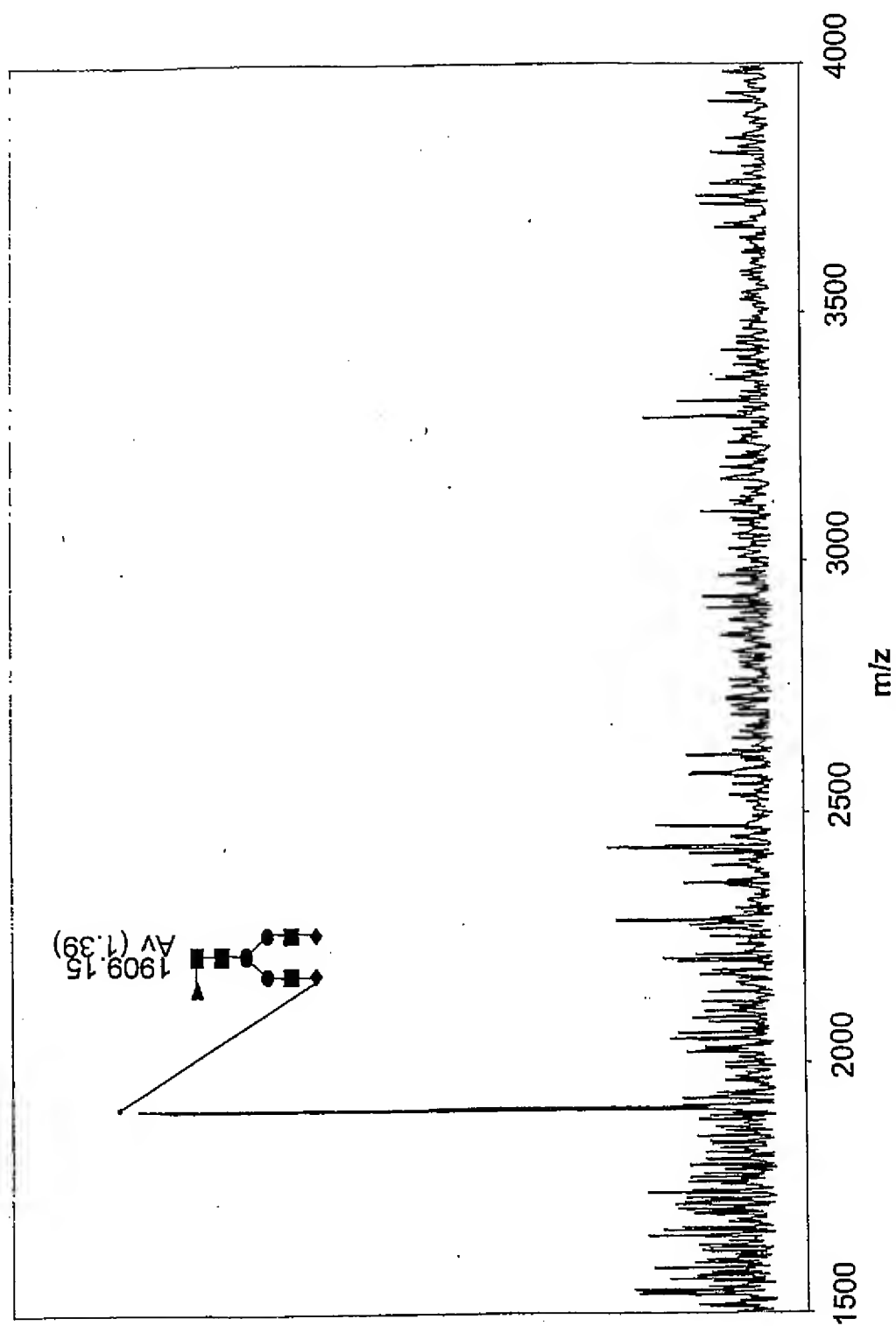


FIG. 173B

477/497

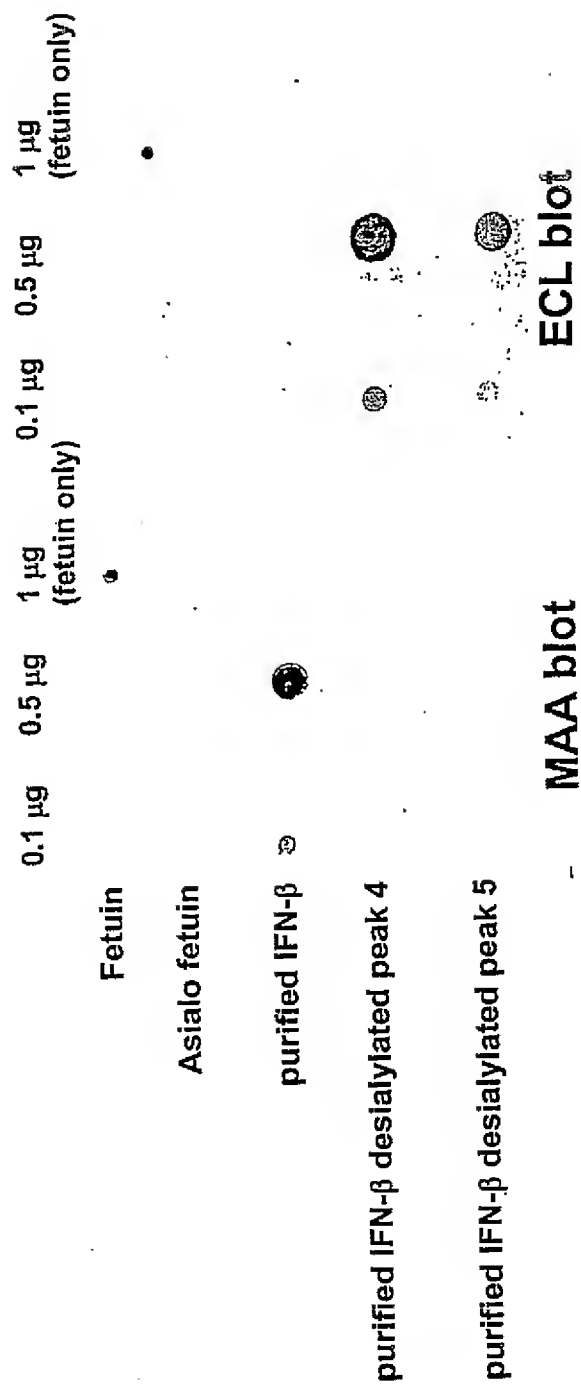


FIG. 174

478/497

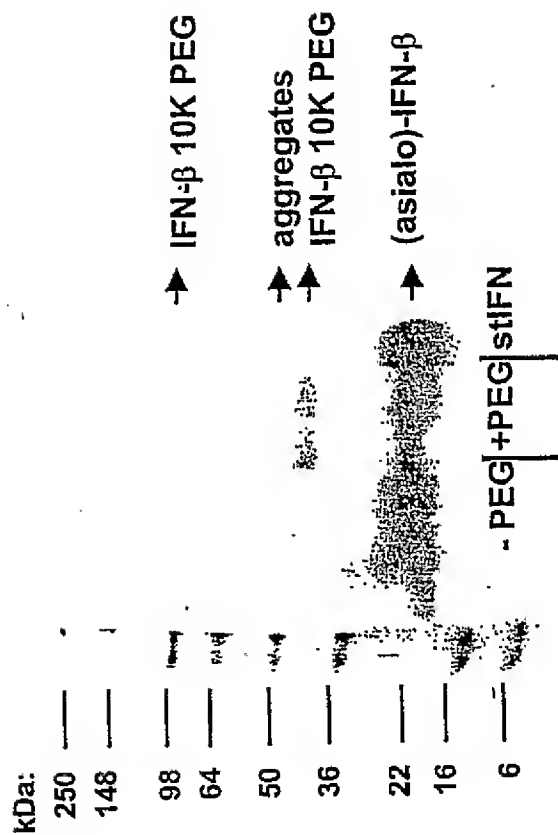


FIG. 175

479/497

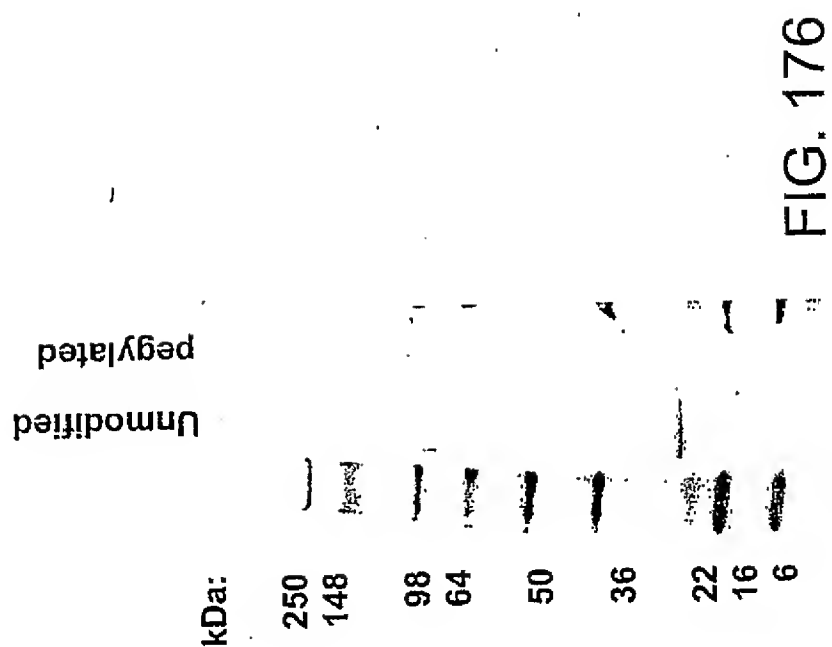


FIG. 176

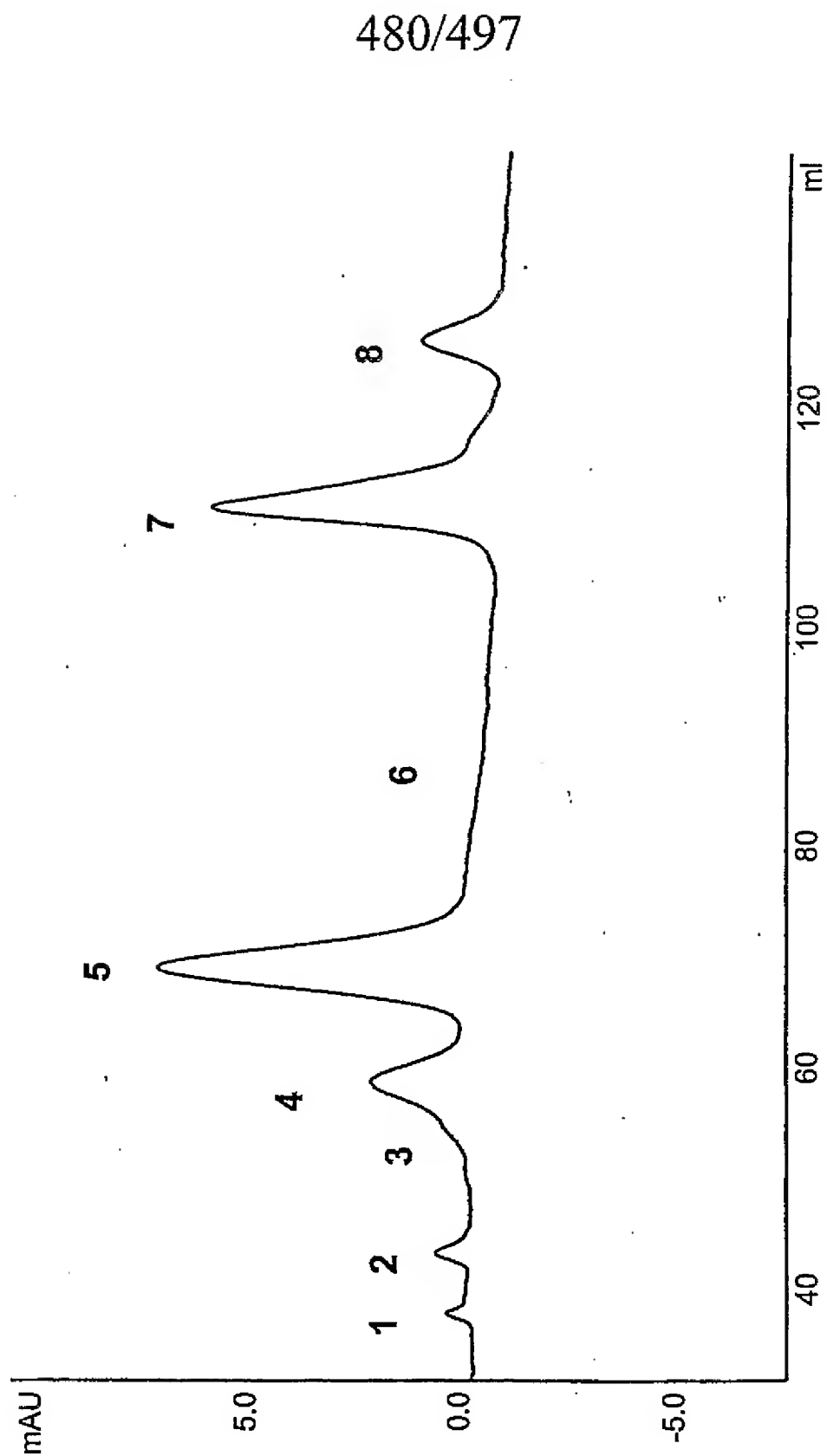


FIG. 177

481/497

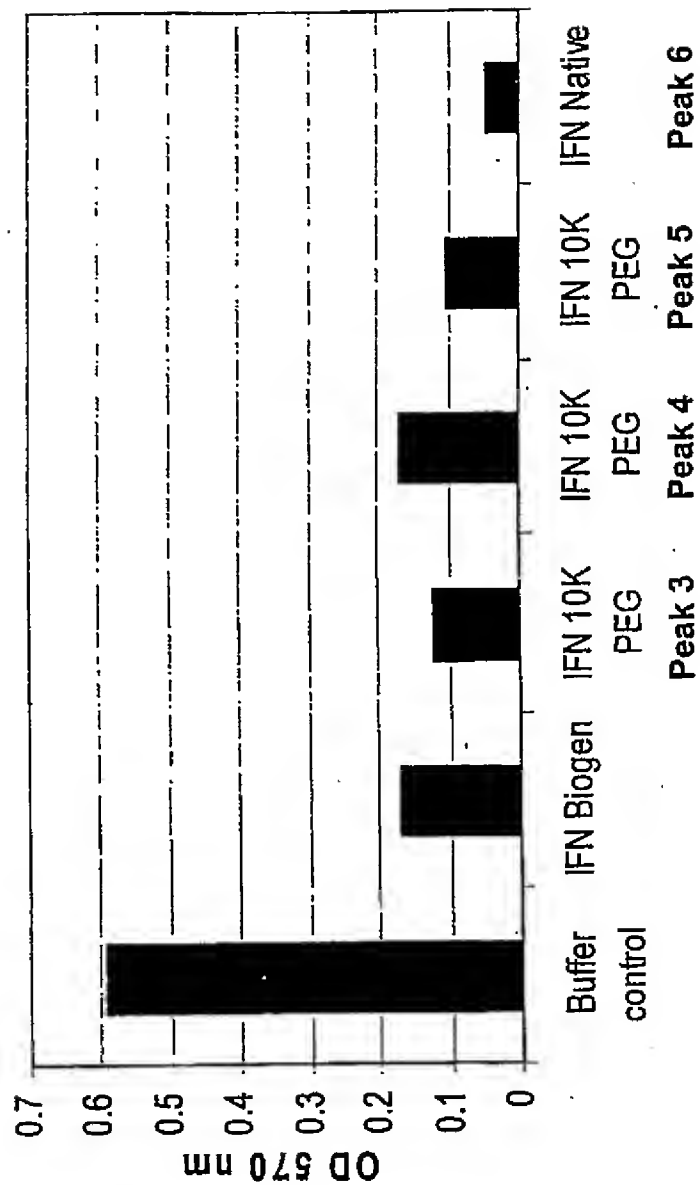


FIG. 178

482/497

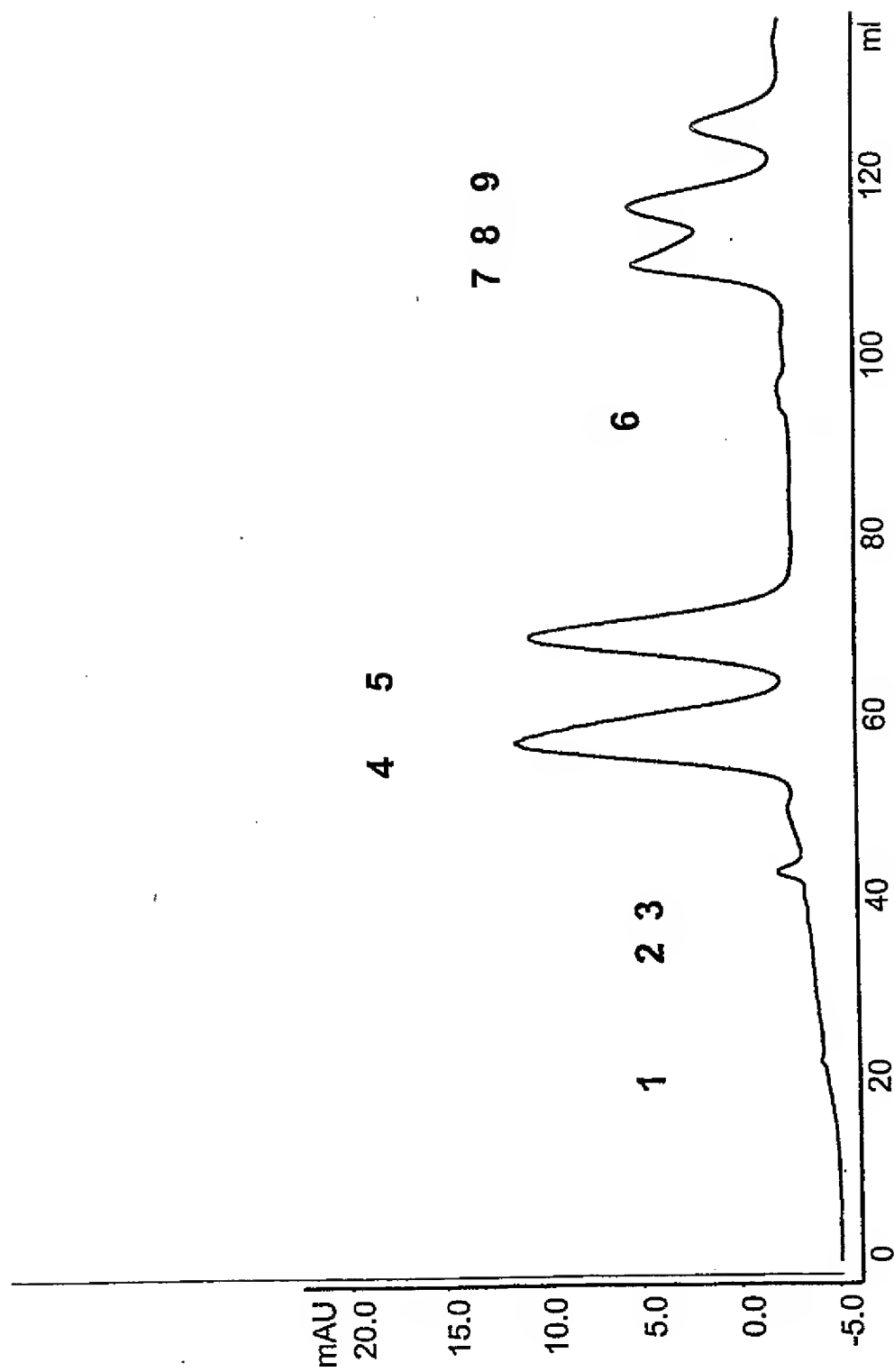


FIG. 179

483/497

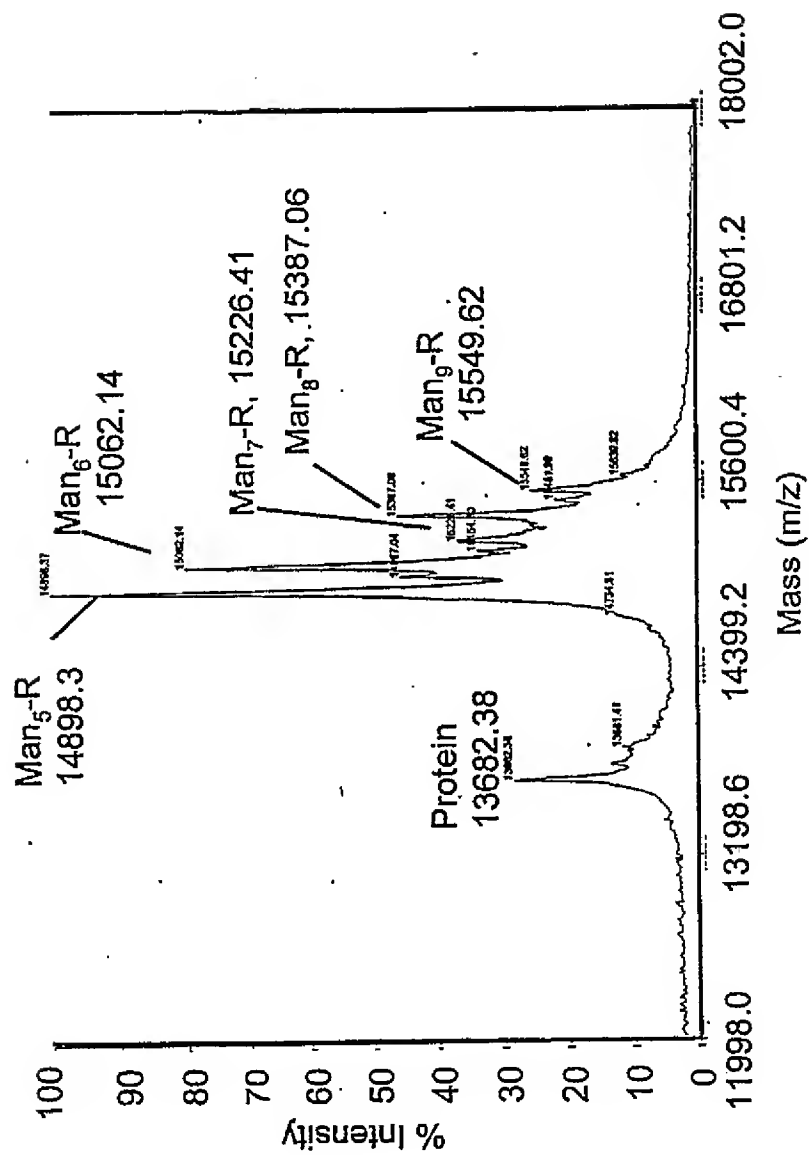


FIG. 180A

484/497

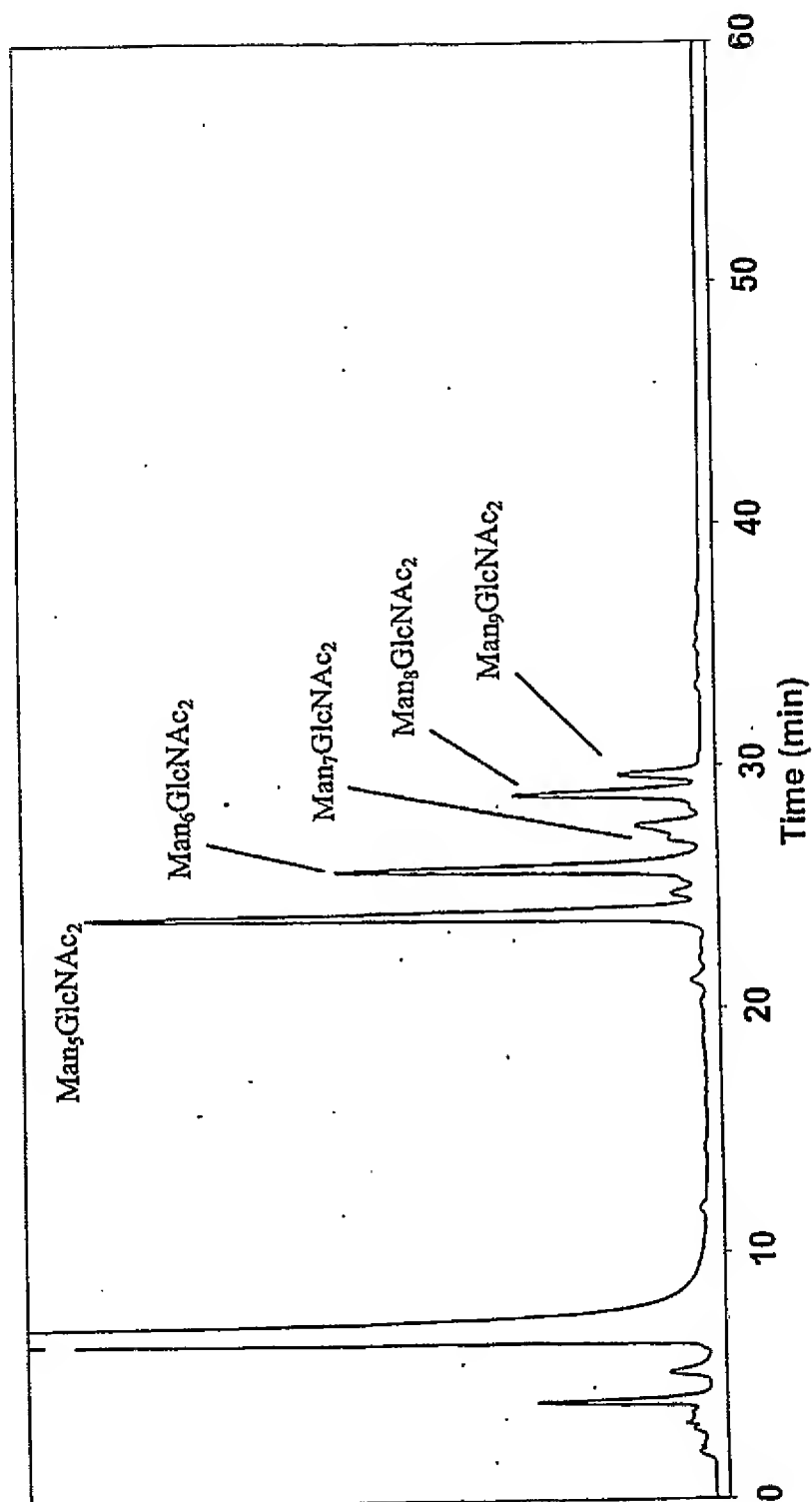


FIG. 180B

485/497

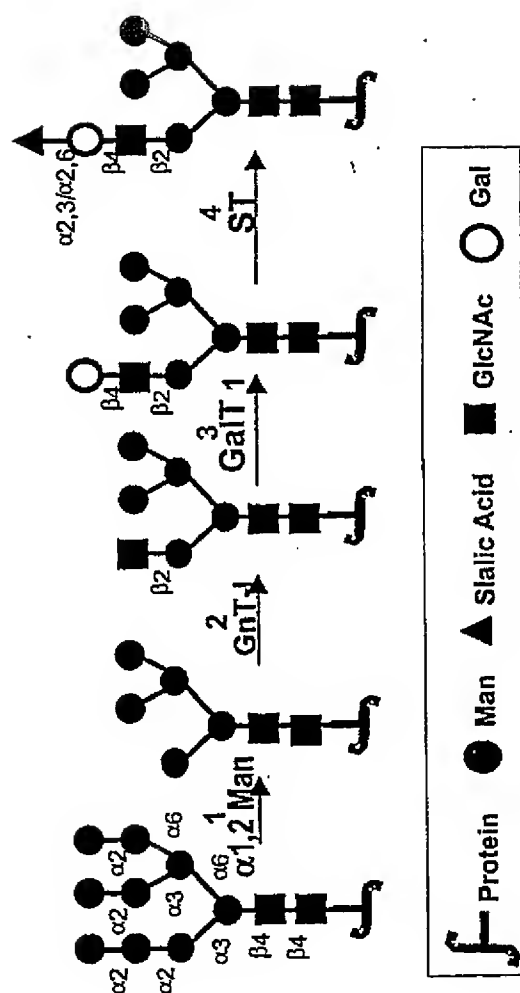


FIG. 181

486/497

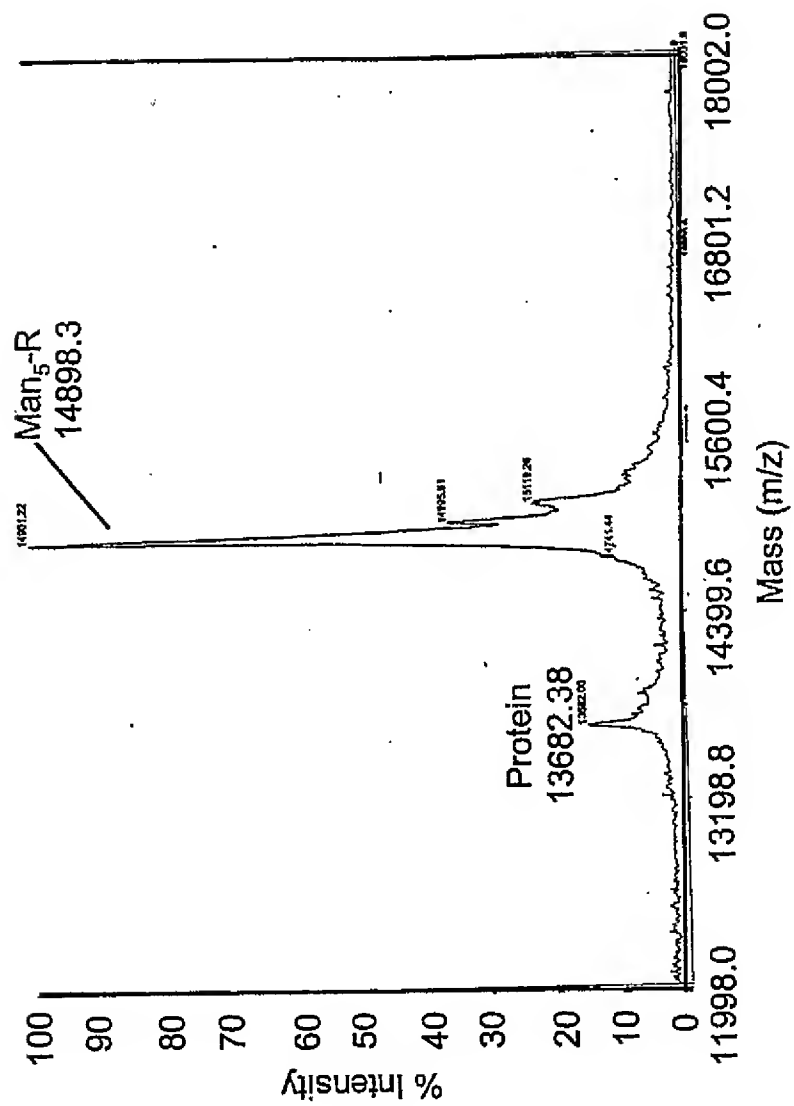


FIG. 182A

487/497

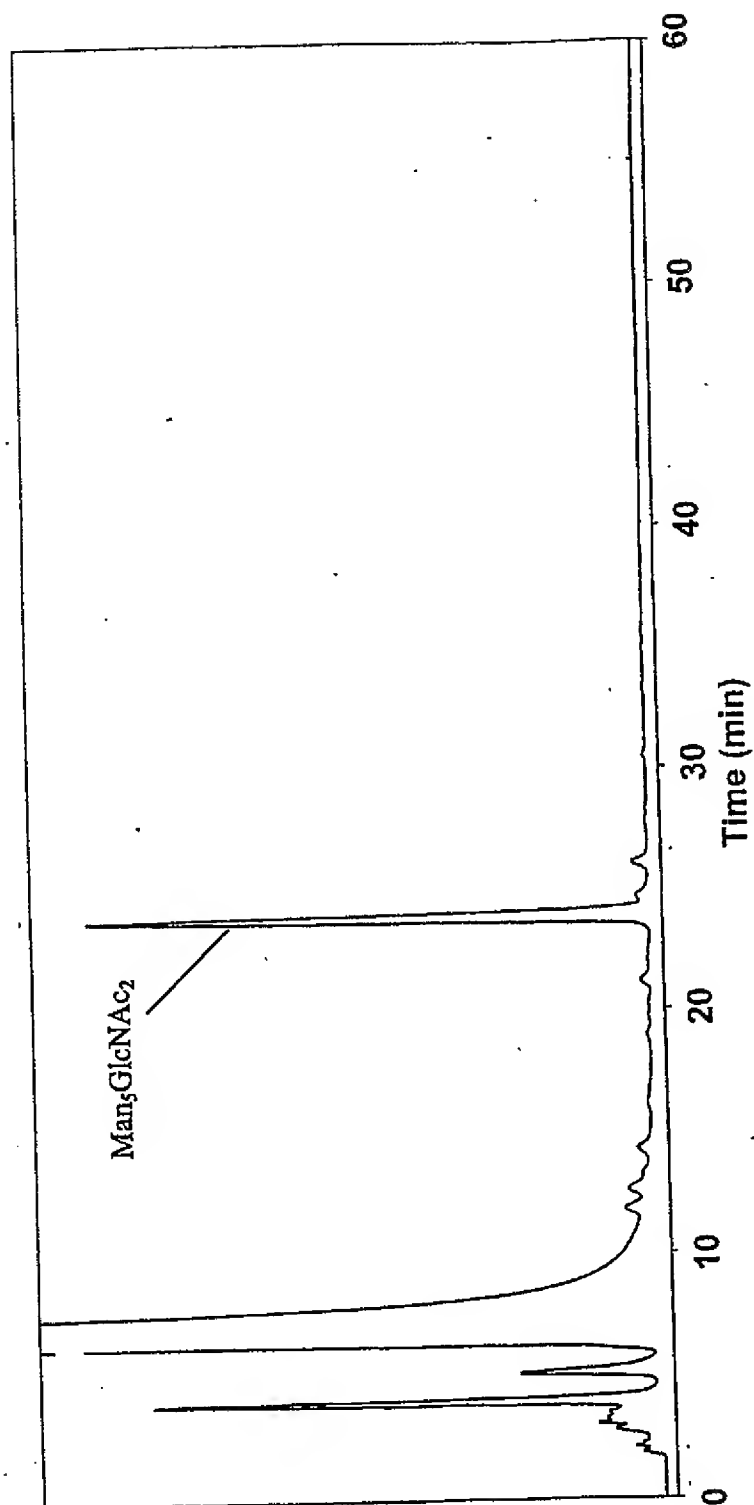


FIG. 182B

488/497

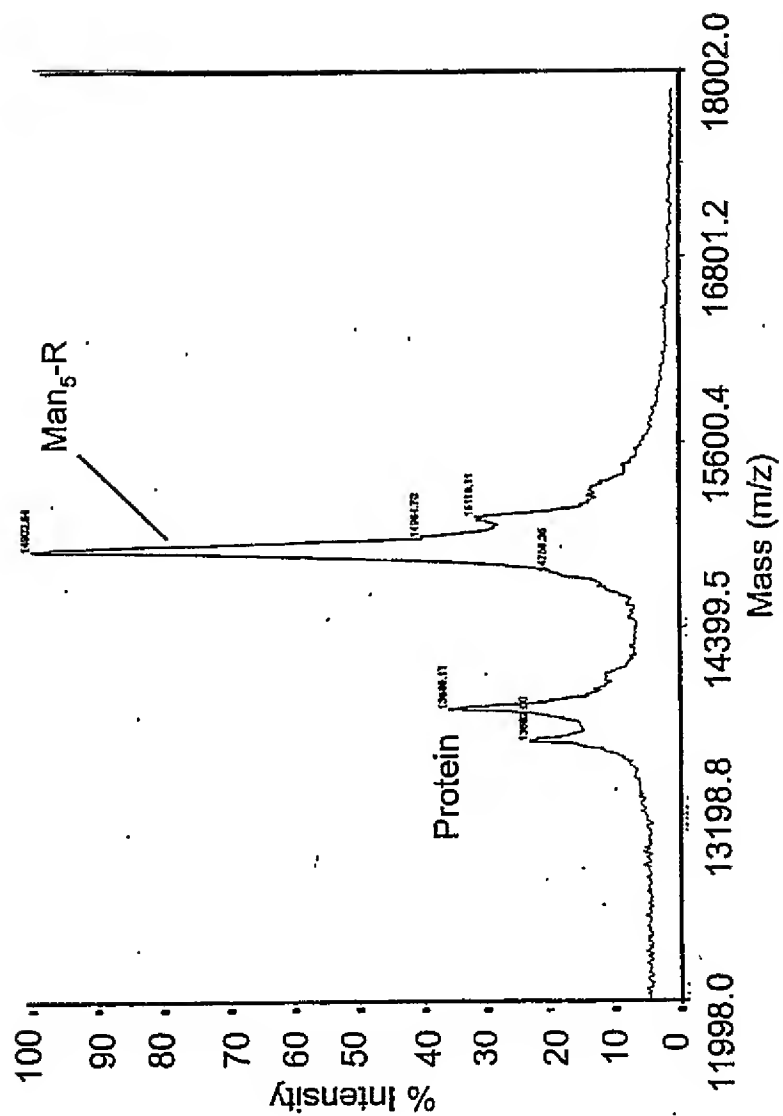


FIG. 183

489/497

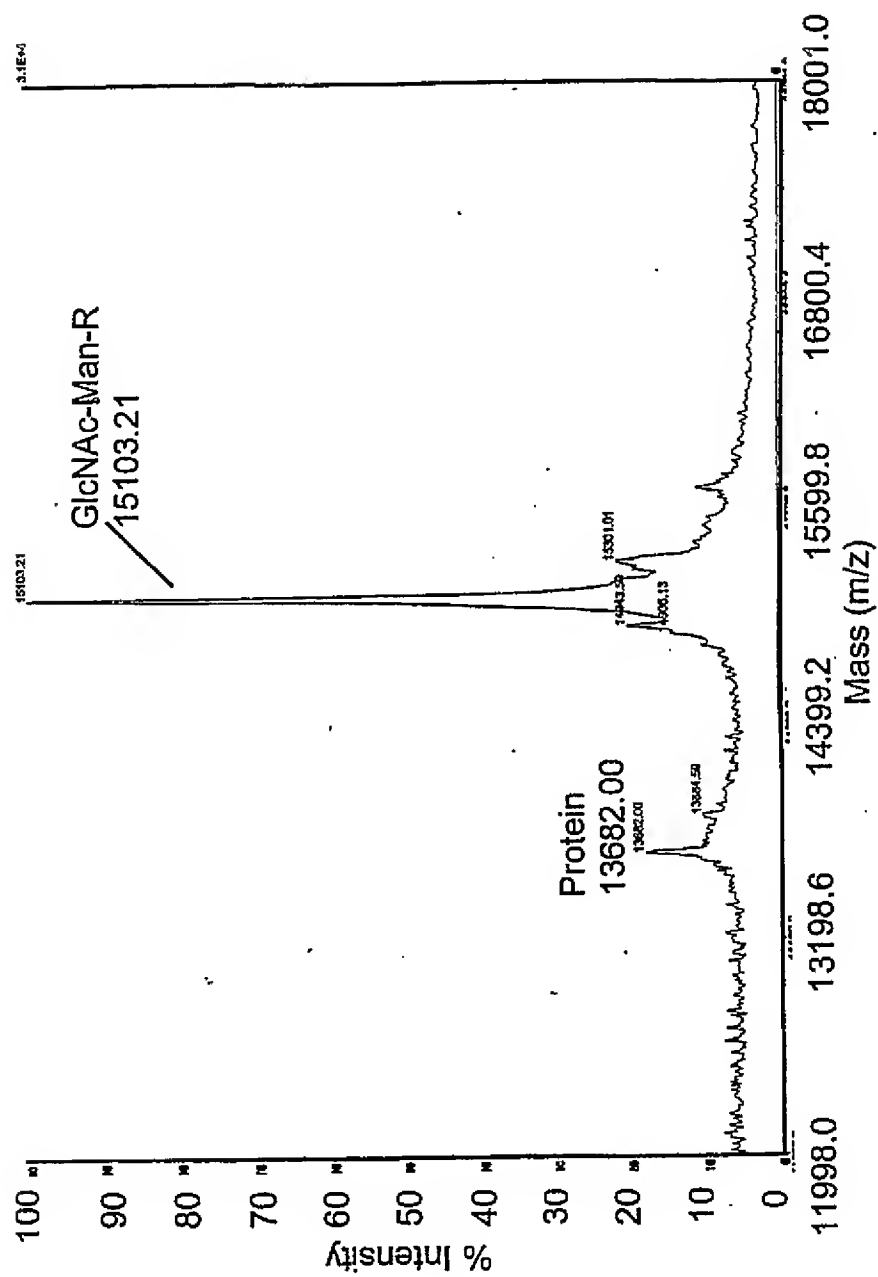


FIG. 184

490/497

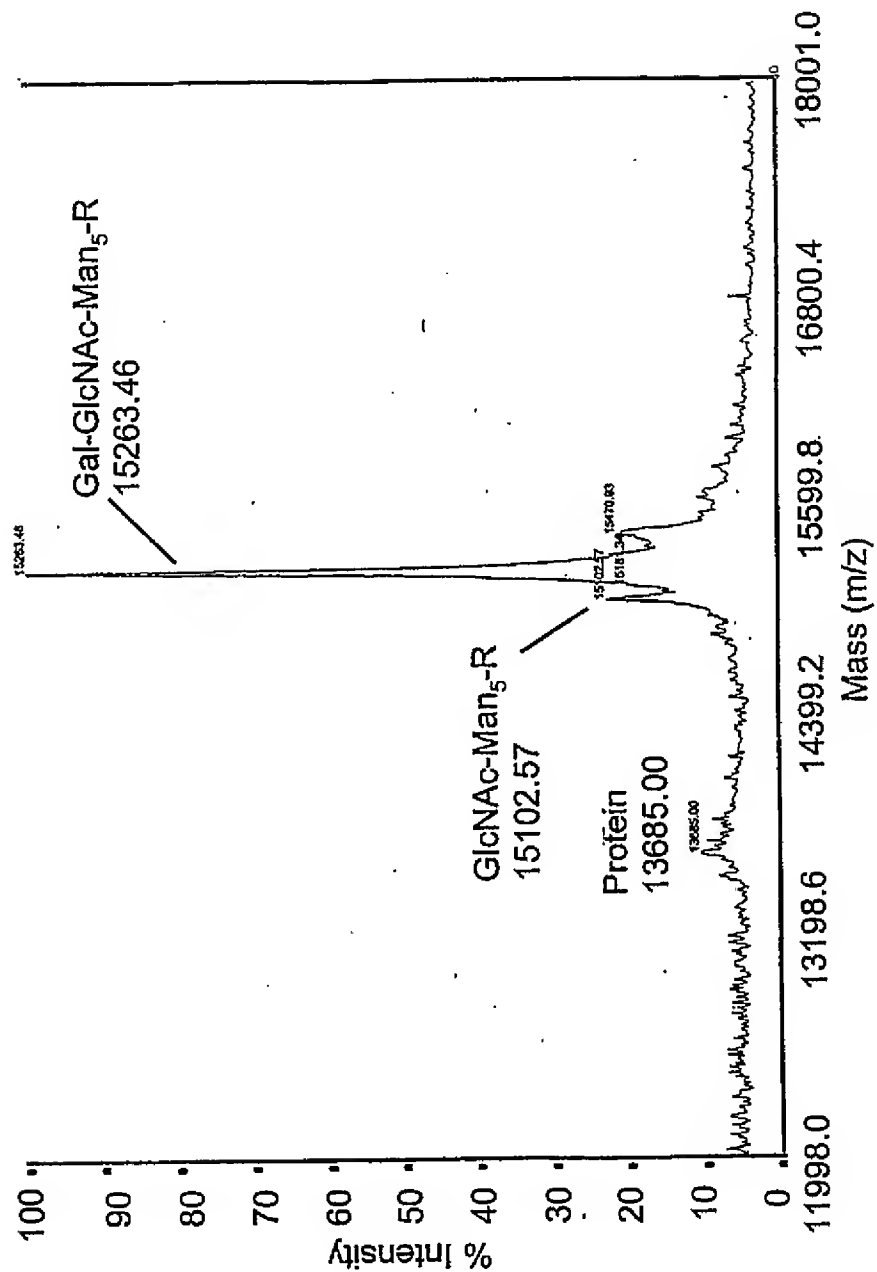


FIG. 185

491/497

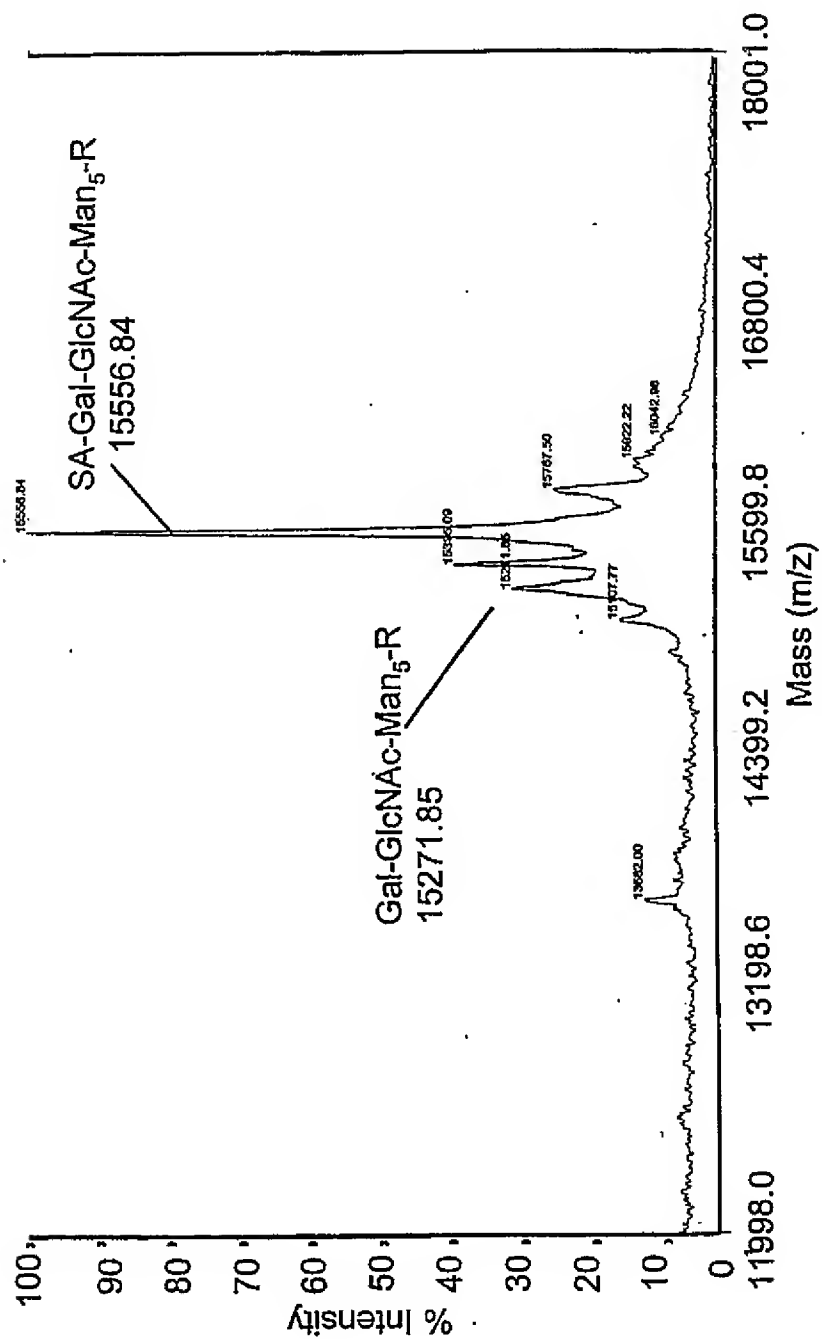


FIG. 186

492/497

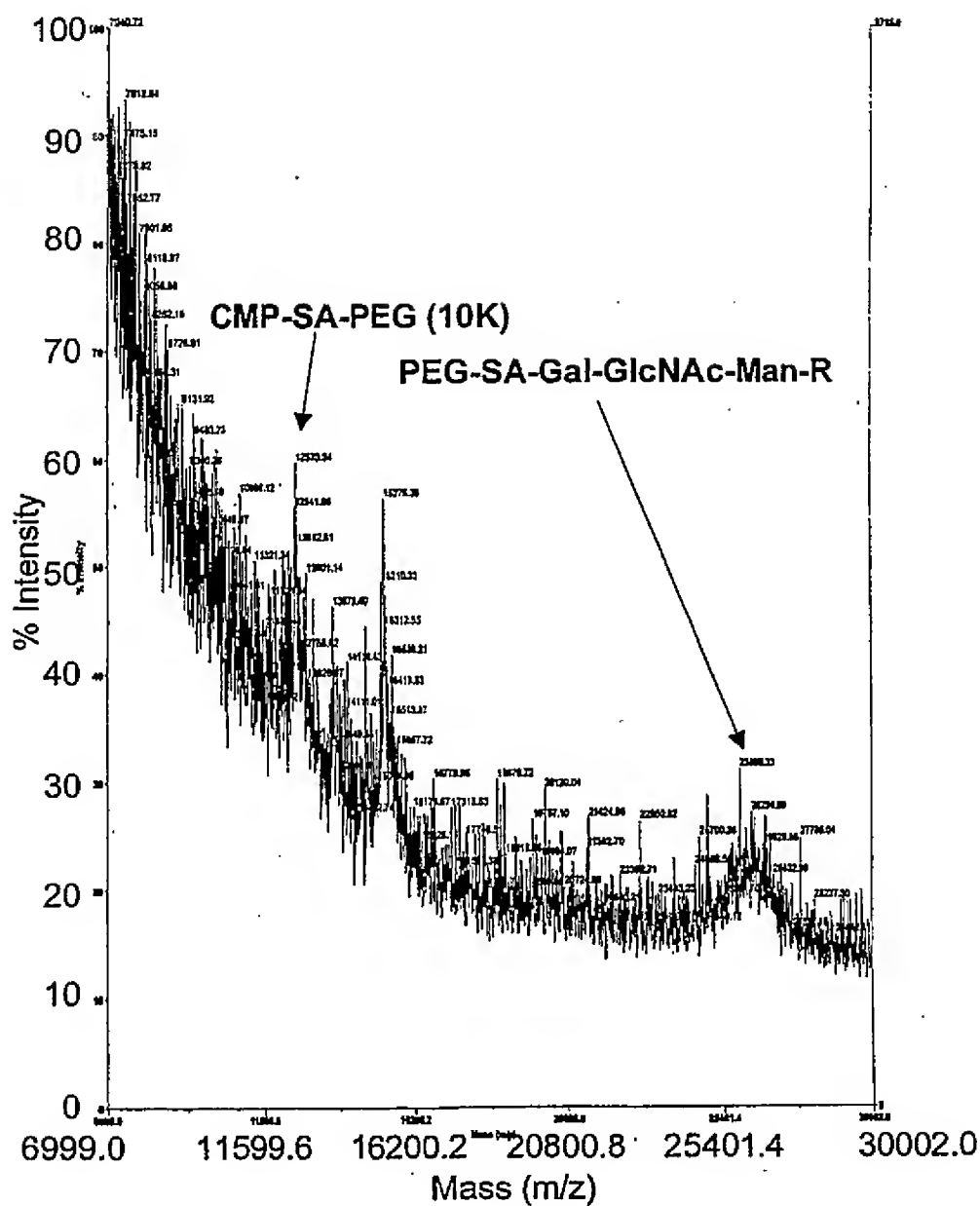
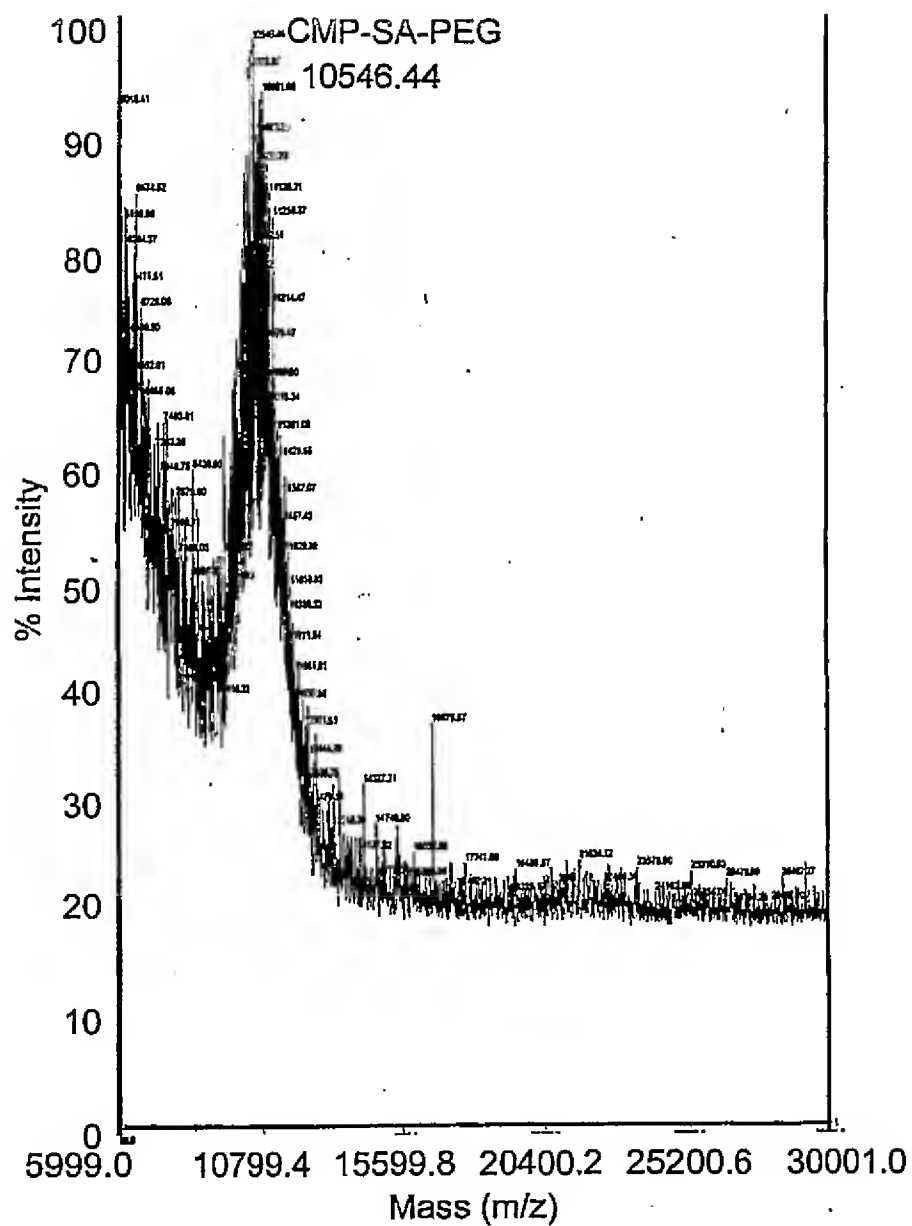


FIG. 187A

493/497



494/497

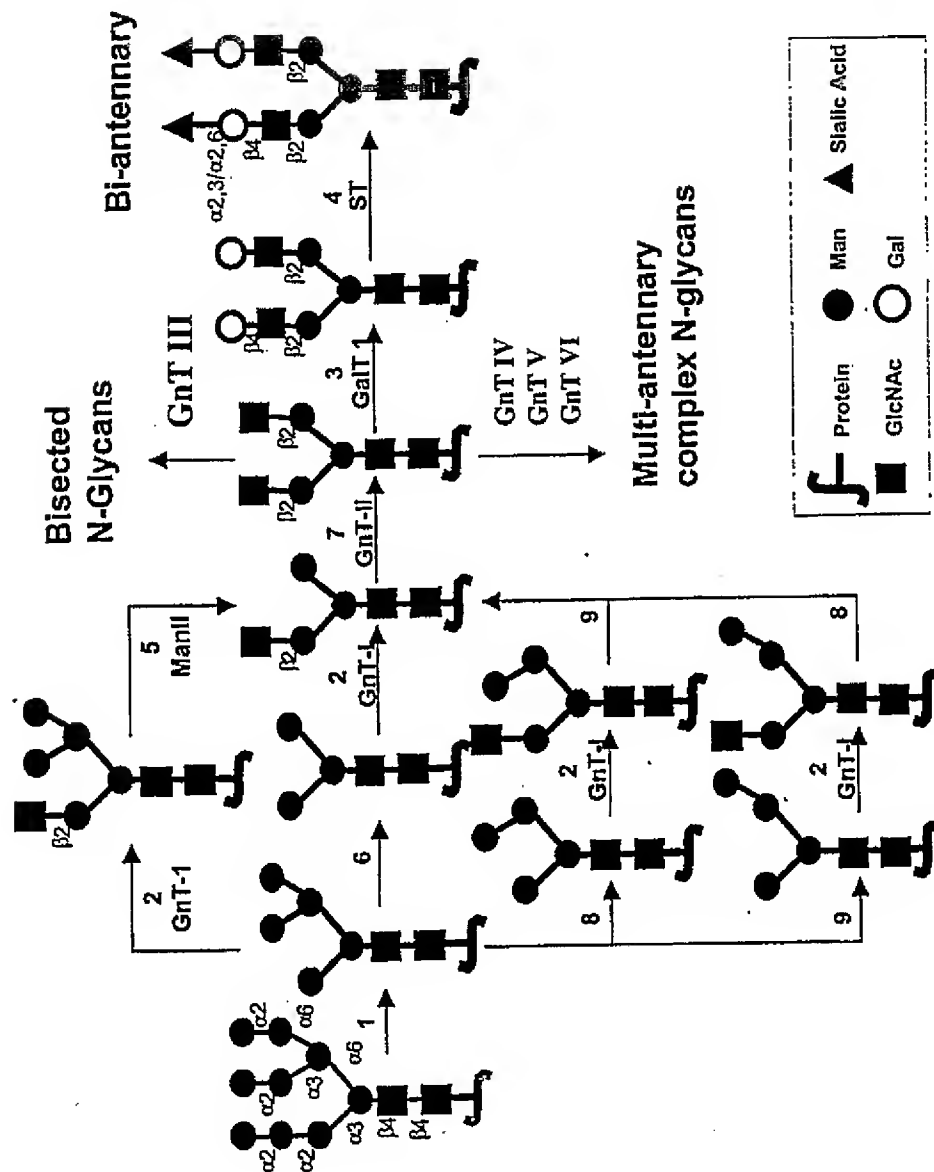


FIG. 188

495/497

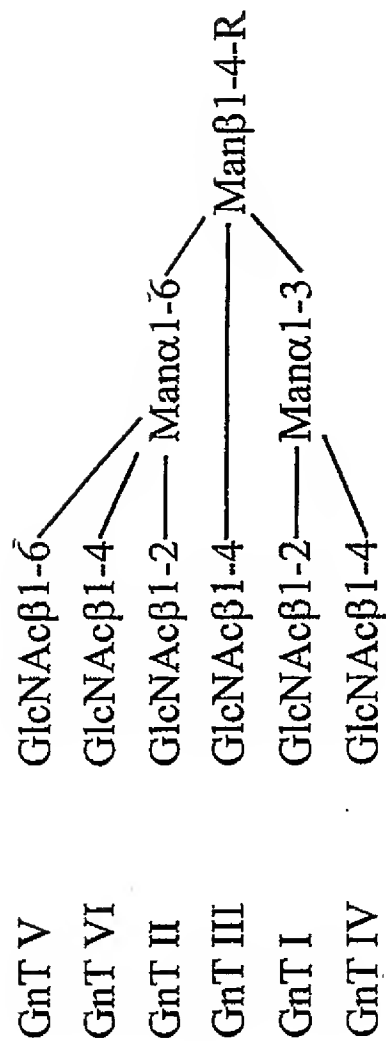


FIG. 189

496/497

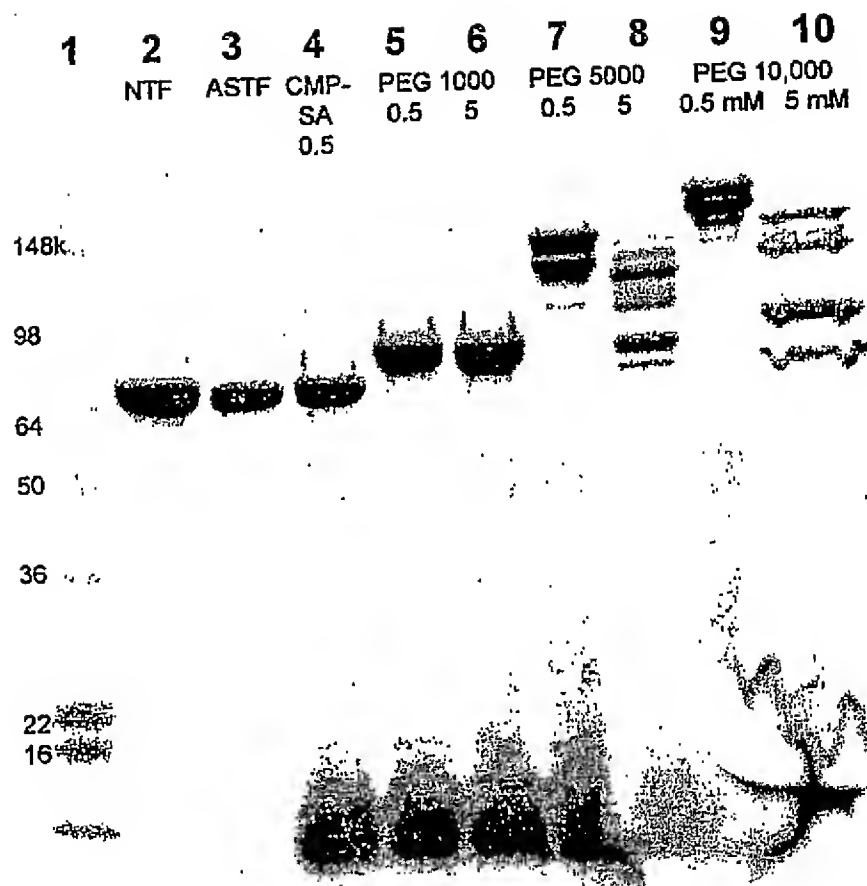


FIG. 190

497/497

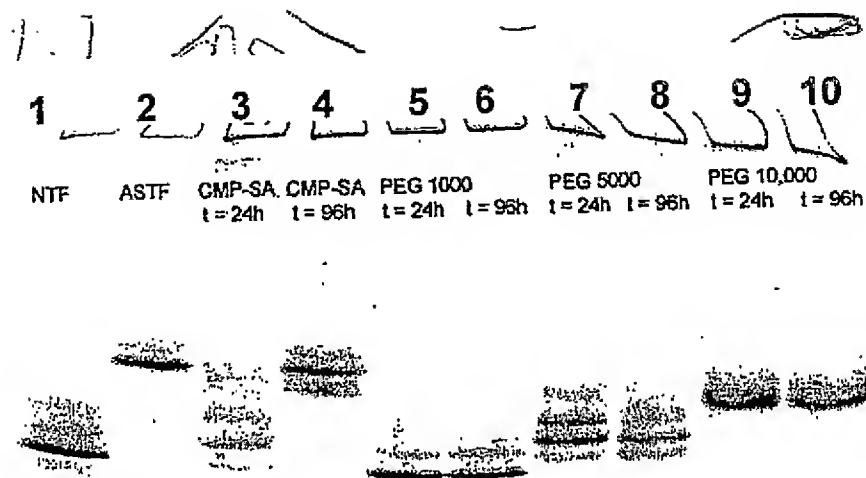


FIG. 191

SEQUENCE LISTING

<110> Neose Technologies, Inc.
DeFrees, Shawn
Zopf, David
Bayer, Robert
Hakes, David
Chen, Xi
Bowe, Caryne

<120> GLYCOPEGYLATION METHODS AND PROTEINS/PEPTIDES PRODUCED BY THE
METHODS

<130> 040853-01-5051WO

<150> US 60/328,523
<151> 2001-10-10

<150> US 60/334,233
<151> 2001-11-28

<150> US 60/334,301
<151> 2001-11-28

<150> US 60/344,692
<151> 2001-10-19

<150> US 60/387,292
<151> 2002-06-07

<150> US 60/391,777
<151> 2002-06-25

<150> US 60/396,594
<151> 2002-07-17

<150> US 60/404,249
<151> 2002-08-16

<150> US 60/407,527
<151> 2002-08-28

<150> PCT/US02/32263
<151> 2002-10-09

<150> US 10/360,779
<151> 2003-02-19

<150> US 10/360,770
<151> 2003-01-06

<150> US 10/287,994
<151> 2002-11-05

<160> 75

<170> PatentIn version 3.2

<210> 1
<211> 525
<212> DNA

<213> Homo sapiens

<400> 1

acccccctgg gccctgccag ctccctgccc cagagcttcc tgctcaagtg cttagagcaa
60

gtgaggaaga tccagggcga tggcgcagcg ctccaggaga agctgtgtgc cacctacaag
120

ctgtgccacc cagaggagct ggtgctgctc ggacactctc tgggcatccc ctgggctccc
180

ctgagcagct gccccagcca ggccctgcag ctggcaggct gcttgagcca actccatagc
240

ggccttttcc tctaccaggg gctcctgcag gccctggaag ggatctcccc cgagttgggt
300

cccaccttgg acacactgca gctggacgtc gccgactttg ccaccacat ctggcagcag
360

atggaagaac tgggaatggc cctgccctg cagcccaccc agggtgccat gccggccttc
420

gcctctgctt tccagcgccg ggcaggaggg gtcttggttg cctcccatct gcagagcttc
480

ctggaggtgt cgtaccgcgt tctacgccac cttgcccagc cctga
525

<210> 2

<211> 174

<212> PRT

<213> Homo sapiens

<400> 2

Thr Pro Leu Gly Pro Ala Ser Ser Leu Pro Gln Ser Phe Leu Leu Lys
1 5 10 15

Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu Gln
20 25 30

Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu Val
35 40 45

Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser Cys
50 55 60

Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His Ser
65 70 75 80

Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile Ser
85 90 95

Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala Asp
100 105 110

Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala Pro
115 120 125

Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala Phe

Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser Phe
 145 150 155 160

Leu Glu Val Ser Tyr Arg Val Leu Arg His Leu Ala Gln Pro
 165 170

<210> 3
 <211> 1733
 <212> DNA
 <213> Homo sapiens

<400> 3
 gcgcctctta tgtacccaca aaaatctatt ttcaaaaaag ttgctctaag aatatagtta
 60
 tcaagttaag taaaatgtca atagcctttt aatttaattt ttaattgttt tatcattctt
 120
 tgcaataata aaacattaac tttatacttt ttaatttaat gtatagaata gagatataca
 180
 taggatatgt aaatagatac acagtgtata tgtgattaaa atataatggg agattcaatc
 240
 agaaaaaagt ttctaaaaag gctctggggg aaaagaggaa ggaaacaata atgaaaaaaa
 300
 tgtggtgaga aaaacagctg aaaacccatg taaagagtgt ataaagaaag caaaaagaga
 360
 agtagaaagt aacacagggg catttggaat atgtaaacga gtatgttccc tatttaaggc
 420
 taggcacaaa gcaaggtctt cagagaacct ggagcctaag gtttaggctc acccatttca
 480
 accagtctag cagcatctgc aacatctaca atggccttga cctttgcttt actggtggcc
 540
 ctctggtgtc tcagctgcaa gtcaagctgc tctgtgggct gtgatctgcc tcaaaccac
 600
 agcctgggta gcaggaggac cttgatgctc ctggcacaga tgaggagaat ctctcttttc
 660
 tcttgcttga aggacagaca tgactttgga tttccccagg aggagtgttg caaccagttc
 720
 caaaaggctg aaaccatccc tgtcctccat gagatgatcc agcagatctt caatctcttc
 780
 agcacaaagg actcatctgc tgcttgggat gagaccctcc tagacaaatt ctacactgaa
 840
 ctctaccagc agctgaatga cctggaagcc tgtgtgatac aggggggtggg ggtgacagag
 900
 actcccctga tgaaggagga ctccattctg gctgtgagga aatacttcca aagaatcact
 960

ctctatctga aagagaagaa atacagccct tgtgcctggg aggttgtcag agcagaaatc
1020

atgagatctt tttctttgtc aacaaacttg caagaaagt taagaagtaa ggaatgaaaa
1080

ctggttcaac atggaaatga ttttcattga ttctgatgcc agctcacctt tttatgatct
1140

gccatttcaa agactcatgt ttctgctatg accatgacac gatttaaate ttttcaaag
1200

tttttaggag tattaatcaa cattgtattc agctcttaag gcactagtcc cttacagagg
1260

accatgctga ctgatccatt atctatttaa atatttttaa aatattatct atttaactat
1320

ttataaaaca acttattttt gttcatatta tgtcatgtgc acctttgcac agtgggtaat
1380

gtaataaaat gtgttctttg tatttggtaa atttattttg tgttggtcat tgaacttttg
1440

ctatggaaact tttgtacttg tttattcttt aaaatgaaat tocaagccta attgtgcaac
1500

ctgattacag aataactggg acacttcatt tgtocatcaa tatttatctc aagatataag
1560

taaaaataaa ctttctgtaa accaagttgt atgttggtact caagataaca ggggtgaacct
1620

aacaaatata attctgctct cttgtgtatt tgatttttgt atgaaaaaaa ctaaaaatgg
1680

taatcatact taattatcag ttatggtaaa tgggtatgaag agaagaagga acg
1733

<210> 4
<211> 188
<212> PRT
<213> Homo sapiens

<400> 4
Met Ala Leu Thr Phe Ala Leu Leu Val Ala Leu Leu Val Leu Ser Cys
1 5 10 15
Lys Ser Ser Cys Ser Val Gly Cys Asp Leu Pro Gln Thr His Ser Leu
20 25 30
Gly Ser Arg Arg Thr Leu Met Leu Leu Ala Gln Met Arg Arg Ile Ser
35 40 45
Leu Phe Ser Cys Leu Lys Asp Arg His Asp Phe Gly Phe Pro Gln Glu
50 55 60
Glu Phe Gly Asn Gln Phe Gln Lys Ala Glu Thr Ile Pro Val Leu His
65 70 75 80

Glu⁸⁵ Met⁸⁵ Ile⁸⁵ Gln⁸⁵ Gln⁸⁵ Ile⁸⁵ Phe⁸⁵ Asn⁸⁵ Leu⁸⁵ Phe⁸⁵ Ser⁸⁵ Thr⁸⁵ Lys⁸⁵ Asp⁸⁵ Ser⁸⁵ Ser⁸⁵
 85 90 95

Ala¹⁰⁰ Ala¹⁰⁰ Trp¹⁰⁰ Asp¹⁰⁰ Glu¹⁰⁰ Thr¹⁰⁰ Leu¹⁰⁰ Leu¹⁰⁰ Asp¹⁰⁰ Lys¹⁰⁰ Phe¹⁰⁰ Tyr¹⁰⁰ Thr¹⁰⁰ Glu¹⁰⁰ Leu¹⁰⁰ Tyr¹⁰⁰
 100 105 110

Gln¹¹⁵ Gln¹¹⁵ Leu¹¹⁵ Asn¹¹⁵ Asp¹¹⁵ Leu¹¹⁵ Glu¹¹⁵ Ala¹¹⁵ Cys¹¹⁵ Val¹¹⁵ Ile¹¹⁵ Gln¹¹⁵ Gly¹¹⁵ Val¹¹⁵ Gly¹¹⁵ Val¹¹⁵
 115 120 125

Thr¹³⁰ Glu¹³⁰ Thr¹³⁰ Pro¹³⁰ Leu¹³⁰ Met¹³⁰ Lys¹³⁰ Glu¹³⁰ Asp¹³⁰ Ser¹³⁰ Ile¹³⁰ Leu¹³⁰ Ala¹³⁰ Val¹³⁰ Arg¹³⁰ Lys¹³⁰
 130 135 140

Tyr¹⁴⁵ Phe¹⁴⁵ Gln¹⁴⁵ Arg¹⁴⁵ Ile¹⁴⁵ Thr¹⁴⁵ Leu¹⁴⁵ Tyr¹⁴⁵ Leu¹⁴⁵ Lys¹⁴⁵ Glu¹⁴⁵ Lys¹⁴⁵ Lys¹⁴⁵ Tyr¹⁴⁵ Ser¹⁴⁵ Pro¹⁴⁵
 145 150 155 160

Cys¹⁶⁵ Ala¹⁶⁵ Trp¹⁶⁵ Glu¹⁶⁵ Val¹⁶⁵ Val¹⁶⁵ Arg¹⁶⁵ Ala¹⁶⁵ Glu¹⁶⁵ Ile¹⁶⁵ Met¹⁶⁵ Arg¹⁶⁵ Ser¹⁶⁵ Phe¹⁶⁵ Ser¹⁶⁵ Leu¹⁶⁵
 165 170 175

Ser¹⁸⁰ Thr¹⁸⁰ Asn¹⁸⁰ Leu¹⁸⁰ Gln¹⁸⁰ Glu¹⁸⁰ Ser¹⁸⁰ Leu¹⁸⁰ Arg¹⁸⁰ Ser¹⁸⁰ Lys¹⁸⁰ Glu¹⁸⁰
 180 185

<210> 5

<211> 757

<212> DNA

<213> Homo sapiens

<400> 5

atgaccaaca agtgtctcct ccaaattgct ctctgttgt gcttctccac tacagctctt
 60

tccatgagct acaacttgct tggattccta caaagaagca gcaattttca gtgtcagaag
 120

ctcctgtggc aattgaatgg gaggcttgaa tattgcctca aggacaggat gaactttgac
 180

atccctgagg agattaagca gctgcagcag ttccagaagg aggacgcgc attgaccatc
 240

tatgagatgc tccagaacat ctttgctatt ttcagacaag attcatctag cactggctgg
 300

aatgagacta ttgttgagaa cctcctggct aatgtctatc atcagataaa ccatctgaag
 360

acagtccctgg aagaaaaact ggagaaagaa gattttacca ggggaaaact catgagcagt
 420

ctgcacctga aaagatatta tgggaggatt ctgcattacc tgaaggccaa ggagtacagt
 480

cactgtgcct ggaccatagt cagagtggaa atoctaagga acttttactt cattaacaga
 540

cttacagggt acctccgaaa ctgaagatct cctagcctgt ccctctggga ctggacaatt
 600

gcttcaagca ttcttcaacc agcagatgct gttaagtga ctgatggcta atgtactgca
 660

aatgaaagga cactagaaga ttttgaaatt tttattaaat tatgagttat ttttatttat
720

ttaaatttta ttttgaaaa taaattattt ttggtgc
757

<210> 6
<211> 187
<212> PRT
<213> Homo sapiens

<400> 6
Met Thr Asn Lys Cys Leu Leu Gln Ile Ala Leu Leu Leu Cys Phe Ser
1 5 10 15
Thr Thr Ala Leu Ser Met Ser Tyr Asn Leu Leu Gly Phe Leu Gln Arg
20 25 30
Ser Ser Asn Phe Gln Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg
35 40 45
Leu Glu Tyr Cys Leu Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu
50 55 60
Ile Lys Gln Leu Gln Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile
65 70 75 80
Tyr Glu Met Leu Gln Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser
85 90 95
Ser Thr Gly Trp Asn Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val
100 105 110
Tyr His Gln Ile Asn His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu
115 120 125
Lys Glu Asp Phe Thr Arg Gly Lys Leu Met Ser Ser Leu His Leu Lys
130 135 140
Arg Tyr Tyr Gly Arg Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser
145 150 155 160
His Cys Ala Trp Thr Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr
165 170 175
Phe Ile Asn Arg Leu Thr Gly Tyr Leu Arg Asn
180 185

<210> 7
<211> 1332
<212> DNA
<213> Homo sapiens

<400> 7
atggtctccc aggcctcag gctcctctgc cttctgcttg ggcttcaggg ctgcctggct
60
gcagtcttcg taaccacagga ggaagccac ggcgctctgc accggcgccg gcgcgccaac
120

gcgttcctgg aggagctgcg gccgggctcc ctggagaggg agtgcaagga ggagcagtgc
180

tccttcgagg agggccggga gatcttcaag gacgcggaga ggacgaagct gttctggatt
240

tcttacagtg atggggacca gtgtgcctca agtccatgcc agaatggggg ctcttgcaag
300

gaccagctcc agtcctatat ctgcttctgc ctccctgcct tcgagggccg gaactgtgag
360

acgcacaagg atgaccagct gatctgtgtg aacgagaacg gcggctgtga gcagtactgc
420

agtgaccaca cgggcaccaa gcgctcctgt cggtgccacg aggggtactc tctgctggca
480

gacgggggtgt tctgcacacc cacagttgaa tatccatgtg gaaaaatacc tattctagaa
540

aaaagaaatg ccagcaaacc ccaaggccga attgtggggg gcaagggtgtg ccccaaaggg
600

gagtgtccat ggcaggctct gttgttggtg aatggagctc agttgtgtgg ggggaccctg
660

atcaacacca tctgggtggt ctccgcggcc cactgtttcg acaaaatcaa gaactggagg
720

aacctgatcg cggtgctggg cgagcacgac ctacgcgagc acgacgggga tgagcagagc
780

cggcgggtgg cgcaggctcat catccccagc acgtacgtcc cgggcaccag caaccacgac
840

atcgcgctgc tccgcctgca ccagcccggtg gtccctactg accatgtggt gccctctgc
900

ctgccgaac ggacgttctc tgagaggacg ctggccttcg tgcgcttctc attggtcagc
960

ggctggggcc agctgctgga ccggtggcgc acggccctgg agctcatggt gctcaacgtg
1020

ccccggctga tgaccagga ctgcctgcag cagtcacgga aggtgggaga ctccccaat
1080

atcacggagt acatgttctg tgccggctac tcggatggca gcaaggactc ctgcaagggg
1140

gacagtggag gccacatgc caccactac cggggcacgt ggtacctgac gggcatcgtc
1200

agctggggcc agggctgcgc aaccgtgggc cactttgggg tgtacaccag ggtctccag
1260

tacatcgagt ggctgcaaaa gctcatgcgc tcagagccac gccaggagt cctcctgcga
1320

gccccatttc cc
1332

<210> 8
<211> 444
<212> PRT
<213> Homo sapiens

<400> 8
Met Val Ser Gln Ala Leu Arg Leu Leu Cys Leu Leu Leu Gly Leu Gln
1 5 10 15
Gly Cys Leu Ala Ala Val Phe Val Thr Gln Glu Glu Ala His Gly Val
20 25 30

Leu His Arg Arg Arg Arg Ala Asn Ala Phe Leu Glu Glu Leu Arg Pro
35 40 45

Gly Ser Leu Glu Arg Glu Cys Lys Glu Glu Gln Cys Ser Phe Glu Glu
50 55 60

Ala Arg Glu Ile Phe Lys Asp Ala Glu Arg Thr Lys Leu Phe Trp Ile
65 70 75 80

Ser Tyr Ser Asp Gly Asp Gln Cys Ala Ser Ser Pro Cys Gln Asn Gly
85 90 95

Gly Ser Cys Lys Asp Gln Leu Gln Ser Tyr Ile Cys Phe Cys Leu Pro
100 105 110

Ala Phe Glu Gly Arg Asn Cys Glu Thr His Lys Asp Asp Gln Leu Ile
115 120 125

Cys Val Asn Glu Asn Gly Gly Cys Glu Gln Tyr Cys Ser Asp His Thr
130 135 140

Gly Thr Lys Arg Ser Cys Arg Cys His Glu Gly Tyr Ser Leu Leu Ala
145 150 155 160

Asp Gly Val Ser Cys Thr Pro Thr Val Glu Tyr Pro Cys Gly Lys Ile
165 170 175

Pro Ile Leu Glu Lys Arg Asn Ala Ser Lys Pro Gln Gly Arg Ile Val
180 185 190

Gly Gly Lys Val Cys Pro Lys Gly Glu Cys Pro Trp Gln Val Leu Leu
195 200 205

Leu Val Asn Gly Ala Gln Leu Cys Gly Gly Thr Leu Ile Asn Thr Ile
210 215 220

Trp Val Val Ser Ala Ala His Cys Phe Asp Lys Ile Lys Asn Trp Arg
225 230 235 240

Asn Leu Ile Ala Val Leu Gly Glu His Asp Leu Ser Glu His Asp Gly
245 250 255

Asp Glu Gln Ser Arg Arg Val Ala Gln Val Ile Ile Pro Ser Thr Tyr
260 265 270

Val Pro Gly Thr Thr Asn His Asp Ile Ala Leu Leu Arg Leu His Gln
275 280 285

Pro Val Val Leu Thr Asp His Val Val Pro Leu Cys Leu Pro Glu Arg
 290 295 300
 Thr Phe Ser Glu Arg Thr Leu Ala Phe Val Arg Phe Ser Leu Val Ser
 305 310 315 320
 Gly Trp Gly Gln Leu Leu Asp Arg Gly Ala Thr Ala Leu Glu Leu Met
 325 330 335
 Val Leu Asn Val Pro Arg Leu Met Thr Gln Asp Cys Leu Gln Gln Ser
 340 345 350
 Arg Lys Val Gly Asp Ser Pro Asn Ile Thr Glu Tyr Met Phe Cys Ala
 355 360 365
 Gly Tyr Ser Asp Gly Ser Lys Asp Ser Cys Lys Gly Asp Ser Gly Gly
 370 375 380
 Pro His Ala Thr His Tyr Arg Gly Thr Trp Tyr Leu Thr Gly Ile Val
 385 390 395 400
 Ser Trp Gly Gln Gly Cys Ala Thr Val Gly His Phe Gly Val Tyr Thr
 405 410 415
 Arg Val Ser Gln Tyr Ile Glu Trp Leu Gln Lys Leu Met Arg Ser Glu
 420 425 430
 Pro Arg Pro Gly Val Leu Leu Arg Ala Pro Phe Pro
 435 440

<210> 9
 <211> 1437
 <212> DNA
 <213> Homo sapiens

<400> 9
 atgcagcgcg tgaacatgat catggcagaa tcaccaagcc tcatcaccat ctgcctttta
 60
 ggatatctac tcagtgtgta atgtacagtt tttcttgatc atgaaaacgc caacaaaatt
 120
 ctgaatcggc caagaggta taattcaggt aaattggaag agtttgttca agggaaacctt
 180
 gagagagaat gtatggaaga aaagtgtagt tttgaagaac cagcagaagt tttgaaaac
 240
 actgaaaaga caactgaatt ttggaagcag tatgttgatg gagatcagtg tgagtccaat
 300
 ccatgtttta atggcggcag ttgcaaggat gacattaatt cctatgaatg ttggtgtccc
 360
 tttggatttg aaggaaagaa ctgtgaatta gatgtaacat gtaacattaa gaatggcaga
 420
 tgcgagcagt tttgtaaaaa tagtgctgat aacaaggtgg ttgctcctg tactgagggg
 480

tatcgaattg cagaaaacca gaagtcctgt gaaccagcag tgccatttcc atgtggaaga
540

gtttctgttt cacaaacttc taagctcacc cgtgctgagg ctgtttttcc tgatgtggac
600

tatgtaaatc ctactgaagc tgaaccatt ttggataaca tcaactcaagg cacccaatca
660

tttaatgact tcaactcgggt tggttggtga gaagatgcca aaccagggtca attcccttgg
720

caggttgttt tgaatggtaa agttgatgca ttctgtggag gctctatcgt taatgaaaaa
780

tggattgtaa ctgctgcca ctgtgttgaa actggtgtta aaattacagt tgcgcagggt
840

gaacataata ttgaggagac agaacataca gagcaaaagc gaaatgtgat tcgagcaatt
900

attcctcacc acaactacaa tgcagctatt aataagtaca accatgacat tgcccttctg
960

gaactggacg aacccttagt gctaaacagc tacgttacac ctatttgcat tgctgacaag
1020

gaatacacga acatcttcct caaatttga tctggctatg taagtggctg ggcaagagtc
1080

ttccacaaag ggagatcagc tttagttctt cagtacctta gagttccact tgttgaccga
1140

gccacatgtc ttcatctac aaagttcacc atctataaca acatgttctg tgctggcttc
1200

catgaaggag gtagagattc atgtcaagga gatagtgggg gaccccatgt tactgaagtg
1260

gaagggacca gtttcttaac tggaattatt agctgggggtg aagagtgtgc aatgaaaggc
1320

aaatatggaa tatataccaa ggtatcccg tatgtcaact ggattaagga aaaaacaaag
1380

ctcacttaat gaaagatgga tttccaagggt taattcattg gaattgaaaa ttaacag
1437

<210> 10
<211> 462
<212> PRT
<213> Homo sapiens

<400> 10
Met Gln Arg Val Asn Met Ile Met Ala Glu Ser Pro Ser Leu Ile Thr
1 5 10 15

Ile Cys Leu Leu Gly Tyr Leu Leu Ser Ala Glu Cys Thr Val Phe Leu
20 25 30

Asp His Glu Asn Ala Asn Lys Ile Leu Asn Arg Pro Lys Arg Tyr Asn

35	40	45
Ser Gly Lys Leu Glu Glu Phe Val Gln Gly Asn Leu Glu Arg Glu Cys 50 55 60		
Met Glu Glu Lys Cys Ser Phe Glu Glu Pro Arg Glu Val Phe Glu Asn 65 70 75 80		
Thr Glu Lys Thr Thr Glu Phe Trp Lys Gln Tyr Val Asp Gly Asp Gln 85 90 95		
Cys Glu Ser Asn Pro Cys Leu Asn Gly Gly Ser Cys Lys Asp Asp Ile 100 105 110		
Asn Ser Tyr Glu Cys Trp Cys Pro Phe Gly Phe Glu Gly Lys Asn Cys 115 120 125		
Glu Leu Asp Val Thr Cys Asn Ile Lys Asn Gly Arg Cys Glu Gln Phe 130 135 140		
Cys Lys Asn Ser Ala Asp Asn Lys Val Val Cys Ser Cys Thr Glu Gly 145 150 155 160		
Tyr Arg Leu Ala Glu Asn Gln Lys Ser Cys Glu Pro Ala Val Pro Phe 165 170 175		
Pro Cys Gly Arg Val Ser Val Ser Gln Thr Ser Lys Leu Thr Arg Ala 180 185 190		
Glu Ala Val Phe Pro Asp Val Asp Tyr Val Asn Pro Thr Glu Ala Glu 195 200 205		
Thr Ile Leu Asp Asn Ile Thr Gln Gly Thr Gln Ser Phe Asn Asp Phe 210 215 220		
Thr Arg Val Val Gly Gly Glu Asp Ala Lys Pro Gly Gln Phe Pro Trp 225 230 235 240		
Gln Val Val Leu Asn Gly Lys Val Asp Ala Phe Cys Gly Gly Ser Ile 245 250 255		
Val Asn Glu Lys Trp Ile Val Thr Ala Ala His Cys Val Glu Thr Gly 260 265 270		
Val Lys Ile Thr Val Val Ala Gly Glu His Asn Ile Glu Glu Thr Glu 275 280 285		
His Thr Glu Gln Lys Arg Asn Val Ile Arg Ala Ile Ile Pro His His 290 295 300		
Asn Tyr Asn Ala Ala Ile Asn Lys Tyr Asn His Asp Ile Ala Leu Leu 305 310 315 320		
Glu Leu Asp Glu Pro Leu Val Leu Asn Ser Tyr Val Thr Pro Ile Cys 325 330 335		
Ile Ala Asp Lys Glu Tyr Thr Asn Ile Phe Leu Lys Phe Gly Ser Gly 340 345 350		
Tyr Val Ser Gly Trp Ala Arg Val Phe His Lys Gly Arg Ser Ala Leu 355 360 365		

Val Leu Gln Tyr Leu Arg^u Val Pro Leu Val Asp Arg Ala Thr Cys Leu
 370 375 380

Arg Ser Thr Lys Phe Thr Ile Tyr Asn Asn Met Phe Cys Ala Gly Phe
 385 390 395 400

His Glu Gly Gly Arg Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro His
 405 410 415

Val Thr Glu Val Glu Gly Thr Ser Phe Leu Thr Gly Ile Ile Ser Trp
 420 425 430

Gly Glu Glu Cys Ala Met Lys Gly Lys Tyr Gly Ile Tyr Thr Lys Val
 435 440 445

Ser Arg Tyr Val Asn Trp Ile Lys Glu Lys Thr Lys Leu Thr
 450 455 460

<210> 11
 <211> 603
 <212> DNA
 <213> Homo sapiens

<400> 11
 atggattact acagaaaata tgcagctatc tttctgggtca cattgtcgggt gtttctgcat
 60

gtttctcatt ccgctcctga tgtgcaggat tgcccagaat gcacgctaca ggaaaaccca
 120

ttttctccc agccgggtgc cccaatactt cagtgcattg gctgctgctt ctctagagca
 180

tatccactc cactaaggtc caagaagacg atgttggtcc aaaagaacgt cacctcagag
 240

tccacttgct gtgtagctaa atcatataac agggtcacag taatgggggg tttcaaagtg
 300

gagaaccaca cggcgtgcc ctgcagtact tgttattatc acaaatttta aatgttttac
 360

caagtgtgt cttgatgact gctgattttc tggaatggaa aattaagttg tttagtgttt
 420

atggctttgt gagataaaac tctccttttc cttaccatac cactttgaca cgcttcaagg
 480

atatactgca gctttactgc cttcctcgtt atoctacagt acaatcagca gtctagttct
 540

tttcatttgg aatgaataca gcattaagct tgttccactg caaataaagc cttttaaatc
 600

atc
 603

<210> 12
 <211> 116
 <212> PRT

<213> Homo sapiens

<400> 12

Met Asp Tyr Tyr Arg Lys Tyr Ala Ala Ile Phe Leu Val Thr Leu Ser
1 5 10 15

Val Phe Leu His Val Leu His Ser Ala Pro Asp Val Gln Asp Cys Pro
20 25 30

Glu Cys Thr Leu Gln Glu Asn Pro Phe Phe Ser Gln Pro Gly Ala Pro
35 40 45

Ile Leu Gln Cys Met Gly Cys Cys Phe Ser Arg Ala Tyr Pro Thr Pro
50 55 60

Leu Arg Ser Lys Lys Thr Met Leu Val Gln Lys Asn Val Thr Ser Glu
65 70 75 80

Ser Thr Cys Cys Val Ala Lys Ser Tyr Asn Arg Val Thr Val Met Gly
85 90 95

Gly Phe Lys Val Glu Asn His Thr Ala Cys His Cys Ser Thr Cys Tyr
100 105 110

Tyr His Lys Ser
115

<210> 13

<211> 390

<212> DNA

<213> Homo sapiens

<400> 13

atgaagacac tccagttttt cttccttttc tgttgctgga aagcaatctg ctgcaatagc
60

tgtgagctga ccaacatcac cattgcaata gagaaagaag aatgtcgttt ctgcataagc
120

atcaacacca cttgggtgtgc tggctactgc tacaccaggg atotggtgta taaggaccca
180

gccaggccca aaatccagaa aacatgtacc ttcaaggaac tggatatatga aacagtgaga
240

gtgcccggct gtgctcacca tgcagattcc ttgtatacat acccagtggc caccagtgt
300

cactgtggca agtgtgacag cgacagcact gattgtactg tgcgaggcct ggggccagc
360

tactgtcct ttggtgaaat gaaagaataa
390

<210> 14

<211> 129

<212> PRT

<213> Homo sapiens

<400> 14

Met Lys Thr Leu Gln Phe Phe Phe Leu Phe Cys Cys Trp Lys Ala Ile

1

5

10

15

Cys Cys Asn Ser Cys Glu Leu Thr Asn Ile Thr Ile Ala Ile Glu Lys
20 25 30

Glu Glu Cys Arg Phe Cys Ile Ser Ile Asn Thr Thr Trp Cys Ala Gly
35 40 45

Tyr Cys Tyr Thr Arg Asp Leu Val Tyr Lys Asp Pro Ala Arg Pro Lys
50 55 60

Ile Gln Lys Thr Cys Thr Phe Lys Glu Leu Val Tyr Glu Thr Val Arg
65 70 75 80

Val Pro Gly Cys Ala His His Ala Asp Ser Leu Tyr Thr Tyr Pro Val
85 90 95

Ala Thr Gln Cys His Cys Gly Lys Cys Asp Ser Asp Ser Thr Asp Cys
100 105 110

Thr Val Arg Gly Leu Gly Pro Ser Tyr Cys Ser Phe Gly Glu Met Lys
115 120 125

Glu

<210> 15
<211> 1342
<212> DNA
<213> Homo sapiens .

<400> 15
cccggagccg gaccggggcc accgcgccg ctctgctccg acaccgcgcc ccctggacag
60

ccgccctctc ctccaggccc gtggggctgg ccctgcaccg ccgagcttcc cgggatgagg
120

gccccgggtg tggtcacccg gcgcgcccc agtcgctgag ggaccccggc caggcgcgga
180

gatgggggtg caogaatgtc ctgcctggct gtggcttctc ctgtccctgc tgtcgctccc
240

tctgggcctc ccagtcctgg gcgccccacc acgcctcatc tgtgacagcc gagtccctga
300

gaggtacctc ttggaggcca aggaggccga gaatatcacg acgggctgtg ctgaacactg
360

cagcttgaat gagaatatca ctgtcccaga caccaaagtt aatttctatg cctggaagag
420

gatggaggtc gggcagcagg ccgtagaagt ctggcagggc ctggccctgc tgtcggaagc
480

tgtcctgcgg ggccaggccc tgttggtcaa ctcttcccag ccgtgggagc ccctgcagct
540

gcatgtggat aaagccgtca gtggccttcg cagcctcacc actctgcttc gggctctgcg
600

agcccagaag gaagccatct cccctccaga tgcggcctca gctgctccac tccgaacaat
660

cactgctgac actttccgca aactcttccg agtctactcc aatttcctcc ggggaaagct
720

gaagctgtac acaggggagg cctgcaggac aggggacaga tgaccagggtg tgtccacctg
780

ggcatatcca ccacctccct caccaacatt gcttgtgcca caccctcccc cgccactcct
840

gaaccccgtc gaggggctct cagctcagcg ccagcctgtc ccatggacac tccagtgcc
900

gcaatgacat ctcaggggcc agaggaactg tccagagagc aactctgaga tctaaggatg
960

tcacagggcc aacttgaggg cccagagcag gaagcattca gagagcagct ttaaactcag
1020

ggacagagcc atgctgggaa gacgcctgag ctactcggc accctgcaaa atttgatgcc
1080

aggacacgct ttggaggcga tttacctgtt ttgcaccta ccatcagggg caggatgacc
1140

tggagaactt aggtggcaag ctgtgacttc tccaggtctc acgggcatgg gcaactccctt
1200

ggtggcaaga gcccccttga caccgggggtg gtgggaacca tgaagacagg atgggggctg
1260

gcctctggct ctcatggggc ccaagttttg tgtattcttc aacctcattg acaagaactg
1320

aaaccaccaa aaaaaaaaaa aa
1342

<210> 16
<211> 193
<212> PRT
<213> Homo sapiens

<400> 16
Met Gly Val His Glu Cys Pro Ala Trp Leu Trp Leu Leu Leu Ser Leu
1 5 10 15

Leu Ser Leu Pro Leu Gly Leu Pro Val Leu Gly Ala Pro Pro Arg Leu
20 25 30

Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu Leu Glu Ala Lys Glu
35 40 45

Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His Cys Ser Leu Asn Glu
50 55 60

Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe Tyr Ala Trp Lys Arg
65 70 75 80

Met Glu Val Gly Gln Gln Ala Val Glu Val Trp Gln Gly Leu Ala Leu
85 90 95

Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu Leu Val Asn Ser Ser
100 105 110

Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp Lys Ala Val Ser Gly
115 120 125

Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu Arg Ala Gln Lys Glu
130 135 140

Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala Pro Leu Arg Thr Ile
145 150 155 160

Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val Tyr Ser Asn Phe Leu
165 170 175

Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala Cys Arg Thr Gly Asp
180 185 190

Arg

<210> 17
<211> 435
<212> DNA
<213> Homo sapiens

<400> 17
atgtggctgc agagcctgct gctcttgggc actgtggcct gcagcatctc tgcacccgcc
60

cgctcgccca gcccagcac gcagccttgg gagcatgtga atgccatcca ggaggcccg
120

cgctctcctga acctgagtag agacactgct gctgagatga atgaaacagt agaagtcac
180

tcagaaatgt ttgacctcca ggagccgacc tgctacaga cccgcttga gctgtacaag
240

cagggcctgc ggggcagcct caccaagctc aagggcccct tgaccatgat ggccagccac
300

tacaagcagc actgccctcc aaccccgga acttctgtg caaccagat tatcacctt
360

gaaagtttca aagagaacct gaaggacttt ctgcttgta tcccccttga ctgctgggag
420

ccagtccagg agtga
435

<210> 18
<211> 144
<212> PRT
<213> Homo sapiens

<400> 18
Met Trp Leu Gln Ser Leu Leu Leu Leu Gly Thr Val Ala Cys Ser Ile

1				5					10						15
Ser	Ala	Pro	Ala	Arg	Ser	Pro	Ser	Pro	Ser	Thr	Gln	Pro	Trp	Glu	His
			20					25					30		
Val	Asn	Ala	Ile	Gln	Glu	Ala	Arg	Arg	Leu	Leu	Asn	Leu	Ser	Arg	Asp
		35					40					45			
Thr	Ala	Ala	Glu	Met	Asn	Glu	Thr	Val	Glu	Val	Ile	Ser	Glu	Met	Phe
	50					55					60				
Asp	Leu	Gln	Glu	Pro	Thr	Cys	Leu	Gln	Thr	Arg	Leu	Glu	Leu	Tyr	Lys
65					70					75					80
Gln	Gly	Leu	Arg	Gly	Ser	Leu	Thr	Lys	Leu	Lys	Gly	Pro	Leu	Thr	Met
				85					90					95	
Met	Ala	Ser	His	Tyr	Lys	Gln	His	Cys	Pro	Pro	Thr	Pro	Glu	Thr	Ser
			100					105					110		
Cys	Ala	Thr	Gln	Ile	Ile	Thr	Phe	Glu	Ser	Phe	Lys	Glu	Asn	Leu	Lys
		115					120					125			
Asp	Phe	Leu	Leu	Val	Ile	Pro	Phe	Asp	Cys	Trp	Glu	Pro	Val	Gln	Glu
130						135					140				

```
<210> 19
<211> 501
<212> DNA
<213> Homo sapiens
```

<400> 19
atgaaatata caagttatat cttggccttt cagctctgca tcgttttggg ttctcttggc
60

tgttactgcc aggaccata tgtaaaagaa gcagaaaacc ttaagaaata ttttaatgca
120

ggtcattcag atgtagcgga taatggaact cttttcttag gcattttgaa gaattggaaa
180

gaggagagtg acagaaaaat aatgcagagc caaattgtct ccttttactt caaacttttt
240

aaaaacttta aagatgacca gagcatccaa aagagtgtgg agaccatcaa ggaagacatg
300

aatgtcaagt ttttcaatag caacaaaaag aaacgagatg acttcgaaaa gctgactaat
360

tattcggtaa ctgacttgaa tgtccaacgc aaagcaatac atgaactcat ccaagtgatg
420

gctgaactgt cgccagcagc taaaacaggg aagcgaaaaa ggagtcagat gctgttttca
480

ggtcgaagag catcccagta a
501

$\langle 210 \rangle$	20
$\langle 211 \rangle$	166

<212> PRT

<213> Homo sapiens

<400> 20

Met Lys Tyr Thr Ser Tyr Ile Leu Ala Phe Gln Leu Cys Ile Val Leu
 1 5 10 15

Gly Ser Leu Gly Cys Tyr Cys Gln Asp Pro Tyr Val Lys Glu Ala Glu
 20 25 30

Asn Leu Lys Lys Tyr Phe Asn Ala Gly His Ser Asp Val Ala Asp Asn
 35 40 45

Gly Thr Leu Phe Leu Gly Ile Leu Lys Asn Trp Lys Glu Glu Ser Asp
 50 55 60

Arg Lys Ile Met Gln Ser Gln Ile Val Ser Phe Tyr Phe Lys Leu Phe
 65 70 75 80

Lys Asn Phe Lys Asp Asp Gln Ser Ile Gln Lys Ser Val Glu Thr Ile
 85 90 95

Lys Glu Asp Met Asn Val Lys Phe Phe Asn Ser Asn Lys Lys Lys Arg
 100 105 110

Asp Asp Phe Glu Lys Leu Thr Asn Tyr Ser Val Thr Asp Leu Asn Val
 115 120 125

Gln Arg Lys Ala Ile His Glu Leu Ile Gln Val Met Ala Glu Leu Ser
 130 135 140

Pro Ala Ala Lys Thr Gly Lys Arg Lys Arg Ser Gln Met Leu Phe Arg
 145 150 155 160

Gly Arg Arg Ala Ser Gln
 165

<210> 21

<211> 1352

<212> DNA

<213> Homo sapiens

<400> 21

ctgggacagt gaatcgacaa tgccgtotc tgtctcgtgg ggcacccctc tgctggcagg
 60

cctgtgctgc ctggtccttg tctccctggc tgaggatccc caggagatg ctgcccagaa
 120

gacagataca tcccaccatg atcaggatca cccaaccttc aacaagatca cccccaacct
 180

ggctgagttc gccttcagcc tataccgcca gctggcacac cagtccaaca gcaccaatat
 240

cttctttctc ccagtgagca togtacagc ctttgcaatg ctctccctgg ggaccaaggc
 300

tgacaactcac gatgaaatcc tggagggcct gaatttcaac ctacaggaga ttccggaggc
 360

tcagatccat gaaggcttcc aggaactcct ccgtaccctc aaccagccag acagccagct
420

ccagctgacc accggcaatg gcctgttcct cagcgagggc ctgaagctag tggataagtt
480

tttgaggat gttaaaaagt tgtaccactc agaagccttc actgtcaact tcggggacac
540

cgaagaggcc aagaaacaga tcaacgatta cgtggagaag ggtactcaag ggaaaattgt
600

ggatttggtc aaggagcttg acagagacac agtttttgcct ctggtgaatt acatcttctt
660

taaaggcaaa tgggagagac cctttgaagt caaggacacc gaggaagagg acttccacgt
720

ggaccaggtg accaccgtga aggtgcctat gatgaagcgt ttaggcatgt ttaacatcca
780

gcactgtaag aagctgtcca gctgggtgct gctgatgaaa tacctgggca atgccaccgc
840

catcttcttc ctgcctgatg aggggaaaact acagcactctg gaaaatgaac tcaccacga
900

tatcatcacc aagttcctgg aaaatgaaga cagaaggtct gccagcttac atttaccxaa
960

actgtocatt actggaacct atgatctgaa gagcgtcctg ggtcaactgg gcactactaa
1020

ggttttcagc aatggggctg acctctccgg ggtcacagag gaggcacccc tgaagctctc
1080

caaggccgtg cataaggctg tgctgaccat cgacgagaaa gggactgaag ctgctggggc
1140

catgttttta gaggccatac ccatgtctat ccccccgag gtcaagttca acaaaccctt
1200

tgtcttctta atgattgaac aaaataccaa gtotccctc ttcattggaa aagtggtgaa
1260

tcccaccaa aaataactgc ctctcgctcc tcaacccctc cctccatcc ctggccccct
1320

ccctggatga cattaaagaa gggttgagct gg
1352

<210> 22
<211> 418
<212> PRT
<213> Homo sapiens

<400> 22
Met Pro Ser Ser Val Ser Trp Gly Ile Leu Leu Leu Ala Gly Leu Cys
1 5 10 15
Cys Leu Val Pro Val Ser Leu Ala Glu Asp Pro Gln Gly Asp Ala Ala

20
 25
 30
 Gln Lys Thr Asp Thr Ser His His Asp Gln Asp His Pro Thr Phe Asn
 35 40 45
 Lys Ile Thr Pro Asn Leu Ala Glu Phe Ala Phe Ser Leu Tyr Arg Gln
 50 55 60
 Leu Ala His Gln Ser Asn Ser Thr Asn Ile Phe Phe Ser Pro Val Ser
 65 70 75 80
 Ile Ala Thr Ala Phe Ala Met Leu Ser Leu Gly Thr Lys Ala Asp Thr
 85 90 95
 His Asp Glu Ile Leu Glu Gly Leu Asn Phe Asn Leu Thr Glu Ile Pro
 100 105 110
 Glu Ala Gln Ile His Glu Gly Phe Gln Glu Leu Leu Arg Thr Leu Asn
 115 120 125
 Gln Pro Asp Ser Gln Leu Gln Leu Thr Thr Gly Asn Gly Leu Phe Leu
 130 135 140
 Ser Glu Gly Leu Lys Leu Val Asp Lys Phe Leu Glu Asp Val Lys Lys
 145 150 155 160
 Leu Tyr His Ser Glu Ala Phe Thr Val Asn Phe Gly Asp Thr Glu Glu
 165 170 175
 Ala Lys Lys Gln Ile Asn Asp Tyr Val Glu Lys Gly Thr Gln Gly Lys
 180 185 190
 Ile Val Asp Leu Val Lys Glu Leu Asp Arg Asp Thr Val Phe Ala Leu
 195 200 205
 Val Asn Tyr Ile Phe Phe Lys Gly Lys Trp Glu Arg Pro Phe Glu Val
 210 215 220
 Lys Asp Thr Glu Glu Glu Asp Phe His Val Asp Gln Val Thr Thr Val
 225 230 235 240
 Lys Val Pro Met Met Lys Arg Leu Gly Met Phe Asn Ile Gln His Cys
 245 250 255
 Lys Lys Leu Ser Ser Trp Val Leu Leu Met Lys Tyr Leu Gly Asn Ala
 260 265 270
 Thr Ala Ile Phe Phe Leu Pro Asp Glu Gly Lys Leu Gln His Leu Glu
 275 280 285
 Asn Glu Leu Thr His Asp Ile Ile Thr Lys Phe Leu Glu Asn Glu Asp
 290 295 300
 Arg Arg Ser Ala Ser Leu His Leu Pro Lys Leu Ser Ile Thr Gly Thr
 305 310 315 320
 Tyr Asp Leu Lys Ser Val Leu Gly Gln Leu Gly Ile Thr Lys Val Phe
 325 330 335
 Ser Asn Gly Ala Asp Leu Ser Gly Val Thr Glu Glu Ala Pro Leu Lys
 340 345 350

Leu Ser Lys Ala Val His Lys Ala Val Leu Thr Ile Asp Glu Lys Gly
 355 360 365
 Thr Glu Ala Ala Gly Ala Met Phe Leu Glu Ala Ile Pro Met Ser Ile
 370 375 380
 Pro Pro Glu Val Lys Phe Asn Lys Pro Phe Val Phe Leu Met Ile Glu
 385 390 395 400
 Gln Asn Thr Lys Ser Pro Leu Phe Met Gly Lys Val Val Asn Pro Thr
 405 410 415

Gln Lys

<210> 23
 <211> 2004
 <212> DNA
 <213> Homo sapiens

<400> 23
 gctaacctag tgcctatagc taaggcaggt acctgcatcc ttgtttttgt ttagtggatc
 60
 ctctatcctt cagagactct ggaacccctg tggctcttctc ttcctctaata gaccctgagg
 120
 ggatggagtt ttcaagtcct tccagagagg aatgtcccaa gcctttgagt agggtaagca
 180
 tcatggctgg cagcctcaca ggtttgcttc tacttcaggc agtgctgtgg gcatcagggtg
 240
 cccgcccctg catccctaaa agcttcgggt acagctcgggt ggtgtgtgtc tgcaatgcca
 300
 catactgtga ctctttgac ccccgacct ttctgcctt tggtaacctc agccgctatg
 360
 agagtacacg cagtgggcga cggatggagc tgagtatggg gcccatccag gctaatacaca
 420
 cgggcacagg cctgctactg acctgcagc cagaacagaa gttccagaaa gtgaagggat
 480
 ttggaggggc catgacagat gctgctgtc tcaacatcct tgccctgtca cccctgccc
 540
 aaaatttgct acttaaactg tactttctctg aagaaggaat cggatataac atcatccggg
 600
 tacccatggc cagctgtgac ttctccatcc gcacctacac ctatgcagac acccctgatg
 660
 atttccagtt gcacaacttc agcctcccag aggaagatac caagctcaag ataccctga
 720
 ttaccggagc cctgcagttg gccagcgtc ccgtttcact ccttgccagc cctgggacat
 780

" caccacttg gcfcaagacc aatggagcgg tgaatgggaa ggggtcacc aagggacagc
840

cggagacat ctaccaccag acctgggcca gatactttgt gaagttcctg gatgcctatg
900

ctgagcaciaa gttacagttc tgggcagtga cagctgaaaa tgagccttct gctgggctgt
960

tgagtggata ccccttcag tgcctgggct tcaccctga acatcagcga gacttcattg
1020

cccgtgacct aggtcctacc ctgcacaaca gtactcacca caatgtccgc ctactcatgc
1080

tggatgacca acgcttgctg ctgccccact gggcaaagggt ggtactgaca gaccagaaag
1140

cagctaaata tgttcatggc attgctgtac attggtacct ggactttctg gctccagcca
1200

aagccaccct aggggagaca caccgcctgt tcccaaacac catgctcttt gcctcagagg
1260

cctgtgtggg ctccaagttc tgggagcaga gtgtgcggct aggtccttg gatcgaggga
1320

tgcagtacag ccacagcatc atcacaacc tctgtacca tgtggtcggc tggaccgact
1380

ggaacccttg cctgaacccc gaaggaggac ccaattgggt gcgtaacttt gtcgacagtc
1440

ccatcattgt agacatcacc aaggacacgt ttacaaaaca gccatgttc taccaccttg
1500

gccacttcag caagttcatt cctgagggt cccagagagt ggggctgggt gccagtcaga
1560

agaacgacct ggacgcagtg gactgatgc atccgatgg ctctgctgtt gtggtcgtgc
1620

taaaccgctc ctctaaggat gtgcctctta ccataagga tctgtgtg ggcttcctgg
1680

agacaatctc acctggctac tccattcaca cctacctgtg gcacgccag tgatggagca
1740

gatactcaag gaggcactgg gctcagcctg ggcattaaag ggacagagtc agctcacag
1800

ctgtctgtga ctaaagaggg cacagcaggg ccagtgtgag cttacagcga cgtaaagcca
1860

ggggcaatgg tttgggtgac tcaatttccc ctctaggtgg tgcccagggc tggaggcccc
1920

tagaaaaaga tcagtaagcc ccagtgtccc cccagcccc atgcttatgt gaacatgcgc
1980

tgtgtgctgc ttgctttgga aact
2004

<210> 24
<211> 536
<212> PRT
<213> Homo sapiens

<400> 24
Met Glu Phe Ser Ser Pro Ser Arg Glu Glu Cys Pro Lys Pro Leu Ser
1 5 10 15
Arg Val Ser Ile Met Ala Gly Ser Leu Thr Gly Leu Leu Leu Leu Gln
20 25 30
Ala Val Ser Trp Ala Ser Gly Ala Arg Pro Cys Ile Pro Lys Ser Phe
35 40 45
Gly Tyr Ser Ser Val Val Cys Val Cys Asn Ala Thr Tyr Cys Asp Ser
50 55 60
Phe Asp Pro Pro Thr Phe Pro Ala Leu Gly Thr Phe Ser Arg Tyr Glu
65 70 75 80
Ser Thr Arg Ser Gly Arg Arg Met Glu Leu Ser Met Gly Pro Ile Gln
85 90 95
Ala Asn His Thr Gly Thr Gly Leu Leu Leu Thr Leu Gln Pro Glu Gln
100 105 110
Lys Phe Gln Lys Val Lys Gly Phe Gly Gly Ala Met Thr Asp Ala Ala
115 120 125
Ala Leu Asn Ile Leu Ala Leu Ser Pro Pro Ala Gln Asn Leu Leu Leu
130 135 140
Lys Ser Tyr Phe Ser Glu Glu Gly Ile Gly Tyr Asn Ile Ile Arg Val
145 150 155 160
Pro Met Ala Ser Cys Asp Phe Ser Ile Arg Thr Tyr Thr Tyr Ala Asp
165 170 175
Thr Pro Asp Asp Phe Gln Leu His Asn Phe Ser Leu Pro Glu Glu Asp
180 185 190
Thr Lys Leu Lys Ile Pro Leu Ile His Arg Ala Leu Gln Leu Ala Gln
195 200 205
Arg Pro Val Ser Leu Leu Ala Ser Pro Trp Thr Ser Pro Thr Trp Leu
210 215 220
Lys Thr Asn Gly Ala Val Asn Gly Lys Gly Ser Leu Lys Gly Gln Pro
225 230 235 240
Gly Asp Ile Tyr His Gln Thr Trp Ala Arg Tyr Phe Val Lys Phe Leu
245 250 255
Asp Ala Tyr Ala Glu His Lys Leu Gln Phe Trp Ala Val Thr Ala Glu
260 265 270
Asn Glu Pro Ser Ala Gly Leu Leu Ser Gly Tyr Pro Phe Gln Cys Leu

275 280 285
 Gly Phe Thr Pro Glu His Gln Arg Asp Phe Ile Ala Arg Asp Leu Gly
 290 295 300
 Pro Thr Leu Ala Asn Ser Thr His His Asn Val Arg Leu Leu Met Leu
 305 310 315 320
 Asp Asp Gln Arg Leu Leu Leu Pro His Trp Ala Lys Val Val Leu Thr
 325 330 335
 Asp Pro Glu Ala Ala Lys Tyr Val His Gly Ile Ala Val His Trp Tyr
 340 345 350
 Leu Asp Phe Leu Ala Pro Ala Lys Ala Thr Leu Gly Glu Thr His Arg
 355 360 365
 Leu Phe Pro Asn Thr Met Leu Phe Ala Ser Glu Ala Cys Val Gly Ser
 370 375 380
 Lys Phe Trp Glu Gln Ser Val Arg Leu Gly Ser Trp Asp Arg Gly Met
 385 390 395 400
 Gln Tyr Ser His Ser Ile Ile Thr Asn Leu Leu Tyr His Val Val Gly
 405 410 415
 Trp Thr Asp Trp Asn Leu Ala Leu Asn Pro Glu Gly Gly Pro Asn Trp
 420 425 430
 Val Arg Asn Phe Val Asp Ser Pro Ile Ile Val Asp Ile Thr Lys Asp
 435 440 445
 Thr Phe Tyr Lys Gln Pro Met Phe Tyr His Leu Gly His Phe Ser Lys
 450 455 460
 Phe Ile Pro Glu Gly Ser Gln Arg Val Gly Leu Val Ala Ser Gln Lys
 465 470 475 480
 Asn Asp Leu Asp Ala Val Ala Leu Met His Pro Asp Gly Ser Ala Val
 485 490 495
 Val Val Val Leu Asn Arg Ser Ser Lys Asp Val Pro Leu Thr Ile Lys
 500 505 510
 Asp Pro Ala Val Gly Phe Leu Glu Thr Ile Ser Pro Gly Tyr Ser Ile
 515 520 525
 His Thr Tyr Leu Trp His Arg Gln
 530 535

<210> 25

<211> 1726

<212> DNA

<213> Homo sapiens

<400> 25

atggatgcaa tgaagagagg gctctgctgt gtgctgctgc tgtgtggagc agtcttcggt
 60

tcgcccagcc aggaaatcca tgcccgatcc agaagaggag ccagatctta ccaagtgate
 120

tgagagatg aaaaaacgca gatgatatac cagcaacatc agtcatggct gcgccctgtg
180

ctcagaagca accgggtgga atattgctgg tgcaacagtg gcagggcaca gtgccactca
240

gtgcctgtca aaagttgcag cgagccaagg tgtttcaacg ggggcacctg ccagcaggcc
300

ctgtacttct cagatttctg gtgccagtgc cccgaaggat ttgctgggaa gtgctgtgaa
360

atagatacca gggccacgtg ctacgaggac cagggcatca gctacagggg cactgtggagc
420

acagcggaga gtggcgccga gtgcaccaac tggaacagca gcgcgttggc ccagaagccc
480

tacagcgggc ggaggccaga cgcctcagg ctgggcctgg ggaaccacaa ctactgcaga
540

aaccagatc gagactcaaa gcctgtgtgc taagtcttta aggcggggaa gtacagctca
600

gagttctgca gcacctctgc ctgctctgag ggaaacagtg actgctactt tgggaatggg
660

tcagcctacc gtggcaagca cagcctcacc gactcgggtg cctcctgcct cccgtggaat
720

tccatgatcc tgataggcaa gggttacaca gcacagaacc ccagtgccca ggcactgggc
780

ctgggcaaac ataattactg ccggaatcct gatggggatg ccaagccctg gtgccacgtg
840

ctgaagaacc gcaggctgac gtgggagtac tgtgatgtgc cctcctgctc cactgtgggc
900

ctgagacagt acagccagcc tcagtttctg atcaaaggag ggctcttctc cgacatcgcc
960

tccacccctt ggcaggctgc catctttgcc aagcacagga ggtcgccggg agagcggttc
1020

ctgtgcgggg gcatactcat cagctcctgc tggattctct ctgccgccca ctgcttccag
1080

gagaggtttc cgcgccacca cctgacgggt atcttgggca gaacataccg ggtggtccct
1140

ggcgaggagg agcagaaatt tgaagtcgaa aaatacattg tccataagga attcgatgat
1200

gacaattacg acaatgacat tgcgtgctg cagctgaaat cggattcgtc ccgctgtgcc
1260

caggagagca gcgtggtccg cactgtgtgc cttccccgg cggacotgca gctgcgggac
1320

tggaaggagt gtgagctctc cggctacggc aagcatgagg ccttgtctcc ttctattcg
1380

gagcggctga aggaggctca tgtcagactg taccatcca gccgctgcac atcacaacat
1440

ttacttaaca gaacagtcac cgacaacatg ctgtgtgctg gagacactcg gagcggcggg
1500

ccccaggcaa acttgacga cgcctgccag ggcgattcgg gaggccccct ggtgtgtctg
1560

aacgatggcc gcatgacttt ggtgggcac atcagctggg gcctgggctg tggacagaag
1620

gatgtcccg gtgtgtacac caaggttacc aactacctag actggattcg tgacaacatg
1680

cgaccgtgac caggaacacc cgactcctca aaagcaaag agatcc
1726

<210> 26
<211> 562
<212> PRT
<213> Homo sapiens

<400> 26
Met Asp Ala Met Lys Arg Gly Leu Cys Cys Val Leu Leu Leu Cys Gly
1 5 10 15

Ala Val Phe Val Ser Pro Ser Gln Glu Ile His Ala Arg Phe Arg Arg
20 25 30

Gly Ala Arg Ser Tyr Gln Val Ile Cys Arg Asp Glu Lys Thr Gln Met
35 40 45

Ile Tyr Gln Gln His Gln Ser Trp Leu Arg Pro Val Leu Arg Ser Asn
50 55 60

Arg Val Glu Tyr Cys Trp Cys Asn Ser Gly Arg Ala Gln Cys His Ser
65 70 75 80

Val Pro Val Lys Ser Cys Ser Glu Pro Arg Cys Phe Asn Gly Gly Thr
85 90 95

Cys Gln Gln Ala Leu Tyr Phe Ser Asp Phe Val Cys Gln Cys Pro Glu
100 105 110

Gly Phe Ala Gly Lys Cys Cys Glu Ile Asp Thr Arg Ala Thr Cys Tyr
115 120 125

Glu Asp Gln Gly Ile Ser Tyr Arg Gly Thr Trp Ser Thr Ala Glu Ser
130 135 140

Gly Ala Glu Cys Thr Asn Trp Asn Ser Ser Ala Leu Ala Gln Lys Pro
145 150 155 160

Tyr Ser Gly Arg Arg Pro Asp Ala Ile Arg Leu Gly Leu Gly Asn His
165 170 175

Asn Tyr Cys Arg Asn Pro Asp Arg Asp Ser Lys Pro Trp Cys Tyr Val

	180						185						190					
Phe Lys Ala Gly Lys Tyr Ser Ser Glu Phe Cys Ser Thr Pro Ala Cys 195 200 205																		
Ser Glu Gly Asn Ser Asp Cys Tyr Phe Gly Asn Gly Ser Ala Tyr Arg 210 215 220																		
Gly Thr His Ser Leu Thr Glu Ser Gly Ala Ser Cys Leu Pro Trp Asn 225 230 235 240																		
Ser Met Ile Leu Ile Gly Lys Val Tyr Thr Ala Gln Asn Pro Ser Ala 245 250 255																		
Gln Ala Leu Gly Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Gly 260 265 270																		
Asp Ala Lys Pro Trp Cys His Val Leu Lys Asn Arg Arg Leu Thr Trp 275 280 285																		
Glu Tyr Cys Asp Val Pro Ser Cys Ser Thr Cys Gly Leu Arg Gln Tyr 290 295 300																		
Ser Gln Pro Gln Phe Arg Ile Lys Gly Gly Leu Phe Ala Asp Ile Ala 305 310 315 320																		
Ser His Pro Trp Gln Ala Ala Ile Phe Ala Lys His Arg Arg Ser Pro 325 330 335																		
Gly Glu Arg Phe Leu Cys Gly Gly Ile Leu Ile Ser Ser Cys Trp Ile 340 345 350																		
Leu Ser Ala Ala His Cys Phe Gln Glu Arg Phe Pro Pro His His Leu 355 360 365																		
Thr Val Ile Leu Gly Arg Thr Tyr Arg Val Val Pro Gly Glu Glu Glu 370 375 380																		
Gln Lys Phe Glu Val Glu Lys Tyr Ile Val His Lys Glu Phe Asp Asp 385 390 395 400																		
Asp Thr Tyr Asp Asn Asp Ile Ala Leu Leu Gln Leu Lys Ser Asp Ser 405 410 415																		
Ser Arg Cys Ala Gln Glu Ser Ser Val Val Arg Thr Val Cys Leu Pro 420 425 430																		
Pro Ala Asp Leu Gln Leu Pro Asp Trp Thr Glu Cys Glu Leu Ser Gly 435 440 445																		
Tyr Gly Lys His Glu Ala Leu Ser Pro Phe Tyr Ser Glu Arg Leu Lys 450 455 460																		
Glu Ala His Val Arg Leu Tyr Pro Ser Ser Arg Cys Thr Ser Gln His 465 470 475 480																		
Leu Leu Asn Arg Thr Val Thr Asp Asn Met Leu Cys Ala Gly Asp Thr 485 490 495																		
Arg Ser Gly Gly Pro Gln Ala Asn Leu His Asp Ala Cys Gln Gly Asp 500 505 510																		

Ser Gly Gly Pro Leu Val Cys Leu Asn Asp Gly Arg Met Thr Leu Val
 515 520 525

Gly Ile Ile Ser Trp Gly Leu Gly Cys Gly Gln Lys Asp Val Pro Gly
 530 535 540

Val Tyr Thr Lys Val Thr Asn Tyr Leu Asp Trp Ile Arg Asp Asn Met
 545 550 555 560

Arg Pro

<210> 27

<211> 825

<212> DNA

<213> Homo sapiens

<400> 27

atcactctct ttaatcacta ctcacattaa cctcaactcc tgccacaatg tacaggatgc
 60

aactcctgtc ttgcattgca ctaattcttg cacttgtcac aaacagtgca cctacttcaa
 120

gttcgacaaa gaaaacaaag aaaacacagc tacaactgga gcatttactg ctggatttac
 180

agatgatttt gaatggaatt aataattaca agaatcccaa actcaccagg atgtcacat
 240

ttaagtttta catgcccaag aaggccacag aactgaaaca gcttcagtgt ctagaagaag
 300

aactcaaacc tctggaggaa gtgctgaatt tagctcaaag caaaaacttt cacttaagac
 360

ccagggactt aatcagcaat atcaacgtaa tagttctgga actaaagga tctgaaacaa
 420

cattcatgtg tgaatatgca gatgagacag caaccattgt agaatttctg aacagatgga
 480

ttaccttttg tcaaagcatc atotcaacac taacttgata attaagtgt tccacttaa
 540

aacatatcag gccttctatt tatttattta aatatttaaa ttttatattt attggtgaat
 600

gtatggttgc tacctattgt aactattatt cttaatctta aaactataaa tatggatctt
 660

ttatgattct ttttgtaagc cctaggggct ctaaaatggt ttaccttatt tatcccaaaa
 720

atatttatta ttatgttgaa tgttaaatat agtatctatg tagattgggt agtaaaaacta
 780

tttaataaat ttgataaata taacaaaaaa aaacaaaaaa aaaaa
 825

<210> 28

<211> 156
 <212> PRT
 <213> Homo sapiens

<400> 28

Met Tyr Arg Met Gln Leu Leu Ser Cys Ile Ala Leu Ile Leu Ala Leu
 1 5 10 15

Val Thr Asn Ser Ala Pro Thr Ser Ser Ser Thr Lys Lys Thr Lys Lys
 20 25 30

Thr Gln Leu Gln Leu Glu His Leu Leu Leu Asp Leu Gln Met Ile Leu
 35 40 45

Asn Gly Ile Asn Asn Tyr Lys Asn Pro Lys Leu Thr Arg Met Leu Thr
 50 55 60

Phe Lys Phe Tyr Met Pro Lys Lys Ala Thr Glu Leu Lys Gln Leu Gln
 65 70 75 80

Cys Leu Glu Glu Glu Leu Lys Pro Leu Glu Glu Val Leu Asn Leu Ala
 85 90 95

Gln Ser Lys Asn Phe His Leu Arg Pro Arg Asp Leu Ile Ser Asn Ile
 100 105 110

Asn Val Ile Val Leu Glu Leu Lys Gly Ser Glu Thr Thr Phe Met Cys
 115 120 125

Glu Tyr Ala Asp Glu Thr Ala Thr Ile Val Glu Phe Leu Asn Arg Trp
 130 135 140

Ile Thr Phe Cys Gln Ser Ile Ile Ser Thr Leu Thr
 145 150 155

<210> 29
 <211> 7931
 <212> DNA
 <213> Homo sapiens

<400> 29

atgcaaatag agctctccac ctgcttcttt ctgtgccttt tgcgattctg ctttagtgcc
 60

accagaagat actacctggg tgcagtggaa ctgtcatggg actatatgca aagtgatctc
 120

ggtgagctgc ctgtggacgc aagatttcct cctagagtgc caaaatcttt tccattcaac
 180

acctcagtcg tgtacaaaaa gactctgttt gtagaattca cggatcacct tttcaacatc
 240

gctaagccaa ggccaccctg gatgggtctg ctaggtccta ccatccaggc tgagggttat
 300

gatacagtggt tcattacact taagaacatg gcttcccatc ctgtcagttc tcatgctggt
 360

ggtgtatcct actggaaagc ttctgaggga gctgaatatg atgatcagac cagtcaaagg
 420

gagaaagaag atgataaagt cttccctggt ggaagccata catatgtctg gcaggctctg
480

aaagagaatg gtccaatggc ctctgaccca ctgtgcctta cctactcata tctttctcat
540

gtggacctgg taaaagactt gaattcaggc ctcatggag ccctactagt atgtagagaa
600

gggagtctgg ccaaggaaaa gacacagacc ttgcacaaat ttatactact ttttgctgta
660

tttgatgaag ggaaaagttg gcactcagaa acaaagaact ccttgatgca ggatagggat
720

gctgcatctg ctcgggcctg gcctaaaatg cacacagtca atggttatgt aaacaggtct
780

ctgccaggtc tgattggatg ccacaggaaa tcagtctatt ggcattgtgat tggatgggc
840

accactcctg aagtgcactc aatattcctc gaaggtcaca catttcttgt gaggaaccat
900

cgccaggcgt ccttggaat ctgcgaata actttcctta ctgctcaaac actcttgatg
960

gaccttggac agtttctact gttttgtcat atctcttccc accaactga tggcatggaa
1020

gcttatgtca aagtagacag ctgtccagag gaacccaac tacgaatgaa aaataatgaa
1080

gaagcggaag actatgatga tgatottact gattctgaaa tggatgtggt caggtttgat
1140

gatgacaact ctcttccctt tatccaaatt cgctcagttg ccaagaagca tcctaaaact
1200

tgggtacatt acattgctgc tgaagaggag gactgggact atgctccctt agtctctgcc
1260

cccgatgaca gaagttataa aagtcaatat ttgaacaatg gccctcagcg gatttgtagg
1320

aagtacaaaa aagtccgatt tatggcatat acagatgaaa cctttaagac tcgtgaagct
1380

attcagcatg aatcaggaat cttgggacct ttactttatg gggaggttg agacacactg
1440

ttgattatat ttaagaatca agcaagcaga ccatataaca tctacctca cgggaatcact
1500

gatgtccgtc ctttgtattc aaggagatta ccaaagggtg taaaacattt gaaggatttt
1560

ccaattctgc caggagaaat attcaaatat aaatggacag tgactgtaga agatgggcca
1620

actaaatcag atcctcggtg cctgaccgcg tattaactta gtttcgttaa tatygyayaya
1680

gatctagctt caggactcat tggccctctc ctcatctgct acaaagaatc tgtagatcaa
1740

agaggaaacc agataatgtc agacaagagg aatgtcatcc tgttttctgt atttgatgag
1800

aaccgaagct ggtacctcac agagaatata caacgcttcc tccccaatcc agctggagtg
1860

cagcttgagg atccagagtt ccaagcctcc aacatcatgc acagcatcaa tggctatgtt
1920

tttgatagtt tgcagttgtc agtttgtttg catgagggtg catactggta cattctaagc
1980

attggagcac agactgactt cttttctgtc ttcttctctg gatatacctt caaacacaaa
2040

atggtctatg aagacacact caccctattc ccattctcag gagaaactgt ctcatgtcg
2100

atggaaaacc caggtctatg gattctgggg tgccacaact cagaçtttctg gaacagagggc
2160

atgaccgcct tactgaaggt ttctagttgt gacaagaaca ctggtgatta ttacgaggac
2220

agttatgaag atatttcagc atacttgctg agtaaaaaa atgccattga accaagaagc
2280

tttctccaga attcaagaca ccgtagcact aggcaaaagc aatttaatgc caccacaatt
2340

ccagaaaatg acatagagaa gactgaccct tggtttgcac acagaacacc tatgcctaaa
2400

atacaaaatg tctcctctag tgatttgttg atgctcttgc gacagagtcc tactccacat
2460

gggctatcct tatctgatct ccaagaagcc aaatatgaga ctttttctga tgatccatca
2520

cctggagcaa tagacagtaa taacagcctg tctgaaatga cacacttcag gccacagctc
2580

catcacagtg gggacatggg atttaccctc gagtcaggcc tccaattaag attaaatgag
2640

aaactgggga caactgcagc aacagagttg aagaaacttg atttcaaagt ttctagtaca
2700

tcaaataatc tgatttcaac aattccatca gacaatttgg cagcaggtac tgataataca
2760

agttccttag gaccccccaag tatgccagtt cattatgata gtcaattaga taccactcta
2820

tttggcaaaa agtcatctcc ccttactgag tctggtagac ctctgagctc gagtgaagaa
2880

aataatgatt caaagtgtgtt agaatcaggt ttaatgaata gccaaagaaag ttcattggga
2940

aaaaatgtat cgtcaacaga gagtggtagg ttatttaaag ggaaaagagc tcatggacct
3000

gctttgttga ctaaagataa tgccttattc aaagttagca tctctttgtt aaagacaaac
3060

aaaacttcca ataattcagc aactaataga aagactcaca ttgatggccc atcattatta
3120

attgagaata gtccatcagt ctggcaaaat atattagaaa gtgacactga gtttaaaaaa
3180

gtgacacott tgattcatga cagaatgctt atggacaaaa atgctacagc tttgaggota
3240

aatcatatgt caaataaaaac tacttcatca aaaaacatgg aaatgggtcca acagaaaaaa
3300

gagggcccca ttccaccaga tgcacaaaat ccagatatgt. cgttctttaa gatgctatto
3360

ttgccagaat cagcaagggtg gatacaaagg actcatggaa agaactctct gaactctggg
3420

caaggcccca gtccaaagca attagtatcc ttaggaccag aaaaatctgt ggaaggctcag
3480

aatttcttgt ctgagaaaaa caaagtggta gtaggaaagg gtgaatttac aaaggacgta
3540

ggactcaaag agatgggtttt tccaagcagc agaaacctat ttcttactaa cttggataat
3600

ttacatgaaa ataatacaca caatcaagaa aaaaaaattc aggaagaaat agaaaagaag
3660

gaaacattaa tccaagagaa tgtagttttg cctcagatac atacagtgcac tggcactaag
3720

aatttcatga agaacctttt cttaactgagc actaggcaaa atgtagaagg ttcattatgac
3780

ggggcatatg ctccagtact tcaagatttt aggtcattaa atgattcaac aaatagaaca
3840

aagaaacaca cagctcattt ctcaaaaaaa ggggaggaag aaaacttgga aggcttggga
3900

aatcaaacca agcaaattgt agagaaatat gcatgcacca caaggatatc tctaataca
3960

agccagcaga attttgtcac gcaacgtagt aagagagctt tgaaacaatt cagactccca
4020

ctagaagaaa cagaacttga aaaaaggata attgtggatg acacctcaac ccagtggtcc
4080

aaaaacatga aacatttgac cccgagcacc ctcacacaga tagactacaa tgagaaggag
4140

aaaggggcca ttactcagtc tcccttatca gattgcctta cgaggagtca tagcatccct
4200

caagcaaata gatctccatt acccattgca aagggtatcat catttccatc tatttagacct
4260

atatactga ccaggggtcct attccaagac aactcttctc atcttccagc agcatcttat
4320

agaaagaaag attctggggt ccaagaaagc agtcatttct tacaaggagc caaaaaaat
4380

aacctttctt tagccattct aaccttggag atgactgggtg atcaaagaga ggttggctcc
4440

ctggggacaa gtgccacaaa ttcagtcaca tacaagaaag ttgagaacac tgttctcccg
4500

aaaccagact tgcccaaac atctggcaaa gttgaattgc ttccaaaagt tcacatttat
4560

cagaaggacc tattccctac ggaaactagc aatgggtctc ctggccatct ggatctcgtg
4620

gaaggagacc ttcttcaggg aacagaggga gcgattaagt ggaatgaagc aaacagacct
4680

ggaaaagttc cctttctgag agtagcaaca gaaagctctg caaagactcc ctccaagcta
4740

ttggatcctc ttgcttggga taaccactat ggtactcaga taccaaaaga agagtggaaa
4800

tccaagaga agtcaccaga aaaaacagct ttaagaaaa aggataccat tttgtccctg
4860

aacgcttggtg aaagcaatca tgcaatagca gcaataaatg agggacaaaa taagcccga
4920

atagaagtca cctgggcaaa gcaaggtagg actgaaaggc tgtgctctca aaaccacca
4980

gtcttgaaac gccatcaacg ggaaataact cgtactactc ttcagtcaga tcaagaggaa
5040

attgactatg atgataccat atcagttgaa atgaagaagg aagattttga catttatgat
5100

gaggatgaaa atcagagccc ccgcagcttt caaaagaaaa cagcacta ttttattgct
5160

gcagtggaga ggctctggga ttatgggatg agtagctccc cacatgttct aagaaacagg
5220

gctcagagtgc gcagtggtccc tcagttcaag aaagttgttt tccaggaatt tactgatggc
5280

tcctttactc agccottata ccgtggagaa ctaaataaac atttgggact cctggggcca
5340

tatataagag cagaagttga agataatata atggtaactt tcagaaatca ggcctctcgt
5400

ccctattcct totattctag ccttattttot tatgaggaag atcagaggca aggagcagaa
5460

cctagaaaaa actttgtcaa gctaatgaa accaaaactt acttttgaa agtgcaacat
5520

catatggcac ccaactaaaga tgagtttgac tgcaaagcct gggcttattt ctctgatgtt
5580

gacctggaaa aagatgtgca ctcaggcctg attggacccc ttctggtctg ccacactaac
5640

acactgaacc ctgctcatgg gagacaagtgc acagtacagg aatttgctct gtttttcacc
5700

atotttgatg agacccaaaag ctggtacttc actgaaaata tggaaagaaa ctgcagggt
5760

ccctgcaata tccagatgga agatcccact tttaagaga attatogctt ccattgcaatc
5820

aattggctaca taatggatac actacctggc ttagtaatgg ctcaggatca aaggattoga
5880

tggtatctgc tcagcatggg cagcaatgaa aacatccatt ctattcattt cagtggacat
5940

gtgttcaactg tacgaaaaaa agaggagtat aaaatggcac tgtacaatct ctatccaggt
6000

gtttttgaga cagtggaaat gttaccatcc aaagctggaa tttggcgggt ggaatgcctt
6060

attggcgagc atctacatgc tgggatgagc acactttttc tgggtgtacg caataagtgt
6120

cagactcccc tgggaatggc ttctggacac attagagatt ttcagattac agcttcagga
6180

caatatggac agtgggcccc aaagctggcc agaattcatt attccggatc aatcaatgcc
6240

tggagacca aggagccctt ttcttgatc aagggtggatc tgttggcacc aatgattatt
6300

cacggcatca agaaccaggg tgcccgtcag aagttctcca gcctctacat ctctcagttt
6360

atcatcatgt atagtottga tgggaagaag tggcagactt atcgaggaaa ttccactgga
6420

accttaatgg tcttctttgg caatgtggat tcatctggga taaaacacaa tatttttaac
6480

cctccaatta ttgctcgata catcogtttg caccoaactc attatagcat tcgcagcact
6540

cttcgcacatgg agttgatggg ctgtgattta aatagttgca gcatgccatt gggaaatggag
6600

agtaaagcaa tatcagatgc acagattact gcttcacot actttaccaa tatgtttgcc
6660

acctggtctc cttcaaaagc tcgacttcac ctccaaggga ggagtaatgc ctggagacct
6720

caggtgaata atccaaaaga gtggctgcaa gtggacttcc agaagacaat gaaagtcaca
6780

ggagtaacta ctcagggagt aaaatctctg cttaccagca tgtatgtgaa ggagttcctc
6840

atctccagca gtcaagatgg ccacagtggt actctctttt ttcagaatgg caaagtaaag
6900

gtttttcagg gaaatcaaga ctccctcaca cctgtgggtga actctctaga cccaccgtta
6960

ctgactcgtt accttcgaat tcacccccag agttgggtgc accagattgc cctgaggatg
7020

gaggttcttg gctgcgaggc acaggacctc tactgagggg gccactgca gcacctgcca
7080

ctgccgtcac ctctccctcc tcagctccag ggcagtgtcc ctccctgggt tgccttctac
7140

ctttgtgcta aatcctagca gacactgcct tgaagcctcc tgaattaact atcatcagtc
7200

ctgcatttct ttggtggggg gccaggaggg tgcacccaat ttaacttaac tcttacctat
7260

tttctgcagc tgctcccaga ttactccttc cttccaatat aactaggcaa aaagaagtga
7320

ggagaaacct gcatgaaagc attcttccct gaaaagttag gcctctcaga gtcaccactt
7380

cctctgttgt agaaaaacta tgtgatgaaa ctttgaaaaa gatatttatg atgttaacat
7440

ttcaggttaa gcctcatacg tttaaaataa aactctcagt tgtttattat cctgatcaag
7500

catggaacaa agcatgtttc aggatcagat caatacaatc ttggagtcaa aaggcaaatc
7560

at ttggacaa tctgcaaaat ggagagaata caataactac tacagtaaag tctgtttctg
7620

cttccttaca catagatata attatgttat ttagtcatta tgaggggcac attcctatct
7680

ccaaaactag cattcttaaa ctgagaatta tagatggggt tcaagaatcc ctaagtcccc
7740

tgaaattata taaggcattc tgtataaatg caaatgtgca tttttctgac gagtgtccat
7800

agatataaag ccatttggtc ttaattctga ccaataaaaa aataagtcag gaggatgcaa
7860

ttgttgaaag ctttgaaata aaataacaat gtcttcttga aatttgtgat ggccaagaaa
7920

gaaaatgatg a
7931

<210> 30
<211> 2351
<212> PRT
<213> Homo sapiens

<400> 30

Met	Gln	Ile	Glu	Leu	Ser	Thr	Cys	Phe	Phe	Leu	Cys	Leu	Leu	Arg	Phe
1				5					10					15	

Cys	Phe	Ser	Ala	Thr	Arg	Arg	Tyr	Tyr	Leu	Gly	Ala	Val	Glu	Leu	Ser
			20					25					30		

Trp	Asp	Tyr	Met	Gln	Ser	Asp	Leu	Gly	Glu	Leu	Pro	Val	Asp	Ala	Arg
	35						40					45			

Phe	Pro	Pro	Arg	Val	Pro	Lys	Ser	Phe	Pro	Phe	Asn	Thr	Ser	Val	Val
	50					55					60				

Tyr	Lys	Lys	Thr	Leu	Phe	Val	Glu	Phe	Thr	Asp	His	Leu	Phe	Asn	Ile
65				70					75					80	

Ala	Lys	Pro	Arg	Pro	Pro	Trp	Met	Gly	Leu	Leu	Gly	Pro	Thr	Ile	Gln
			85					90						95	

Ala	Glu	Val	Tyr	Asp	Thr	Val	Val	Ile	Thr	Leu	Lys	Asn	Met	Ala	Ser
			100					105					110		

His	Pro	Val	Ser	Leu	His	Ala	Val	Gly	Val	Ser	Tyr	Trp	Lys	Ala	Ser
		115					120					125			

Glu	Gly	Ala	Glu	Tyr	Asp	Asp	Gln	Thr	Ser	Gln	Arg	Glu	Lys	Glu	Asp
	130					135					140				

Asp	Lys	Val	Phe	Pro	Gly	Gly	Ser	His	Thr	Tyr	Val	Trp	Gln	Val	Leu
145					150					155					160

Lys	Glu	Asn	Gly	Pro	Met	Ala	Ser	Asp	Pro	Leu	Cys	Leu	Thr	Tyr	Ser
			165						170					175	

Tyr	Leu	Ser	His	Val	Asp	Leu	Val	Lys	Asp	Leu	Asn	Ser	Gly	Leu	Ile
			180					185					190		

Gly	Ala	Leu	Leu	Val	Cys	Arg	Glu	Gly	Ser	Leu	Ala	Lys	Glu	Lys	Thr
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

195	200	205
Gln Thr Leu His Lys Phe Ile Leu Leu Phe Ala Val Phe Asp Glu Gly 210 215 220		
Lys Ser Trp His Ser Glu Thr Lys Asn Ser Leu Met Gln Asp Arg Asp 225 230 235 240		
Ala Ala Ser Ala Arg Ala Trp Pro Lys Met His Thr Val Asn Gly Tyr 245 250 255		
Val Asn Arg Ser Leu Pro Gly Leu Ile Gly Cys His Arg Lys Ser Val 260 265 270		
Tyr Trp His Val Ile Gly Met Gly Thr Thr Pro Glu Val His Ser Ile 275 280 285		
Phe Leu Glu Gly His Thr Phe Leu Val Arg Asn His Arg Gln Ala Ser 290 295 300		
Leu Glu Ile Ser Pro Ile Thr Phe Leu Thr Ala Gln Thr Leu Leu Met 305 310 315 320		
Asp Leu Gly Gln Phe Leu Leu Phe Cys His Ile Ser Ser His Gln His 325 330 335		
Asp Gly Met Glu Ala Tyr Val Lys Val Asp Ser Cys Pro Glu Glu Pro 340 345 350		
Gln Leu Arg Met Lys Asn Asn Glu Glu Ala Glu Asp Tyr Asp Asp Asp 355 360 365		
Leu Thr Asp Ser Glu Met Asp Val Val Arg Phe Asp Asp Asp Asn Ser 370 375 380		
Pro Ser Phe Ile Gln Ile Arg Ser Val Ala Lys Lys His Pro Lys Thr 385 390 395 400		
Trp Val His Tyr Ile Ala Ala Glu Glu Glu Asp Trp Asp Tyr Ala Pro 405 410 415		
Leu Val Leu Ala Pro Asp Asp Arg Ser Tyr Lys Ser Gln Tyr Leu Asn 420 425 430		
Asn Gly Pro Gln Arg Ile Gly Arg Lys Tyr Lys Lys Val Arg Phe Met 435 440 445		
Ala Tyr Thr Asp Glu Thr Phe Lys Thr Arg Glu Ala Ile Gln His Glu 450 455 460		
Ser Gly Ile Leu Gly Pro Leu Leu Tyr Gly Glu Val Gly Asp Thr Leu 465 470 475 480		
Leu Ile Ile Phe Lys Asn Gln Ala Ser Arg Pro Tyr Asn Ile Tyr Pro 485 490 495		
His Gly Ile Thr Asp Val Arg Pro Leu Tyr Ser Arg Arg Leu Pro Lys 500 505 510		
Gly Val Lys His Leu Lys Asp Phe Pro Ile Leu Pro Gly Glu Ile Phe 515 520 525		

Lys Tyr Lys Trp Thr Val Thr Val Glu Asp Gly Pro Thr Lys Ser Asp
 530 535 540

Pro Arg Cys Leu Thr Arg Tyr Tyr Ser Ser Phe Val Asn Met Glu Arg
 545 550 555 560

Asp Leu Ala Ser Gly Leu Ile Gly Pro Leu Leu Ile Cys Tyr Lys Glu
 565 570 575

Ser Val Asp Gln Arg Gly Asn Gln Ile Met Ser Asp Lys Arg Asn Val
 580 585 590

Ile Leu Phe Ser Val Phe Asp Glu Asn Arg Ser Trp Tyr Leu Thr Glu
 595 600 605

Asn Ile Gln Arg Phe Leu Pro Asn Pro Ala Gly Val Gln Leu Glu Asp
 610 615 620

Pro Glu Phe Gln Ala Ser Asn Ile Met His Ser Ile Asn Gly Tyr Val
 625 630 635 640

Phe Asp Ser Leu Gln Leu Ser Val Cys Leu His Glu Val Ala Tyr Trp
 645 650 655

Tyr Ile Leu Ser Ile Gly Ala Gln Thr Asp Phe Leu Ser Val Phe Phe
 660 665 670

Ser Gly Tyr Thr Phe Lys His Lys Met Val Tyr Glu Asp Thr Leu Thr
 675 680 685

Leu Phe Pro Phe Ser Gly Glu Thr Val Phe Met Ser Met Glu Asn Pro
 690 695 700

Gly Leu Trp Ile Leu Gly Cys His Asn Ser Asp Phe Arg Asn Arg Gly
 705 710 715 720

Met Thr Ala Leu Leu Lys Val Ser Ser Cys Asp Lys Asn Thr Gly Asp
 725 730 735

Tyr Tyr Glu Asp Ser Tyr Glu Asp Ile Ser Ala Tyr Leu Leu Ser Lys
 740 745 750

Asn Asn Ala Ile Glu Pro Arg Ser Phe Ser Gln Asn Ser Arg His Arg
 755 760 765

Ser Thr Arg Gln Lys Gln Phe Asn Ala Thr Thr Ile Pro Glu Asn Asp
 770 775 780

Ile Glu Lys Thr Asp Pro Trp Phe Ala His Arg Thr Pro Met Pro Lys
 785 790 795 800

Ile Gln Asn Val Ser Ser Ser Asp Leu Leu Met Leu Leu Arg Gln Ser
 805 810 815

Pro Thr Pro His Gly Leu Ser Leu Ser Asp Leu Gln Glu Ala Lys Tyr
 820 825 830

Glu Thr Phe Ser Asp Asp Pro Ser Pro Gly Ala Ile Asp Ser Asn Asn
 835 840 845

Ser Leu Ser Glu Met Thr His Phe Arg Pro Gln Leu His His Ser Gly
 850 855 860

Asp Met Val Phe Thr Pro Glu Ser Gly Leu Gln Leu Arg Leu Asn Glu
 865 870 875 880

Lys Leu Gly Thr Thr Ala Ala Thr Glu Leu Lys Lys Leu Asp Phe Lys
 885 890 895

Val Ser Ser Thr Ser Asn Asn Leu Ile Ser Thr Ile Pro Ser Asp Asn
 900 905 910

Leu Ala Ala Gly Thr Asp Asn Thr Ser Ser Leu Gly Pro Pro Ser Met
 915 920 925

Pro Val His Tyr Asp Ser Gln Leu Asp Thr Thr Leu Phe Gly Lys Lys
 930 935 940

Ser Ser Pro Leu Thr Glu Ser Gly Gly Pro Leu Ser Leu Ser Glu Glu
 945 950 955 960

Asn Asn Asp Ser Lys Leu Leu Glu Ser Gly Leu Met Asn Ser Gln Glu
 965 970 975

Ser Ser Trp Gly Lys Asn Val Ser Ser Thr Glu Ser Gly Arg Leu Phe
 980 985 990

Lys Gly Lys Arg Ala His Gly Pro Ala Leu Leu Thr Lys Asp Asn Ala
 995 1000 1005

Leu Phe Lys Val Ser Ile Ser Leu Leu Lys Thr Asn Lys Thr Ser
 1010 1015 1020

Asn Asn Ser Ala Thr Asn Arg Lys Thr His Ile Asp Gly Pro Ser
 1025 1030 1035

Leu Leu Ile Glu Asn Ser Pro Ser Val Trp Gln Asn Ile Leu Glu
 1040 1045 1050

Ser Asp Thr Glu Phe Lys Lys Val Thr Pro Leu Ile His Asp Arg
 1055 1060 1065

Met Leu Met Asp Lys Asn Ala Thr Ala Leu Arg Leu Asn His Met
 1070 1075 1080

Ser Asn Lys Thr Thr Ser Ser Lys Asn Met Glu Met Val Gln Gln
 1085 1090 1095

Lys Lys Glu Gly Pro Ile Pro Pro Asp Ala Gln Asn Pro Asp Met
 1100 1105 1110

Ser Phe Phe Lys Met Leu Phe Leu Pro Glu Ser Ala Arg Trp Ile
 1115 1120 1125

Gln Arg Thr His Gly Lys Asn Ser Leu Asn Ser Gly Gln Gly Pro
 1130 1135 1140

Ser Pro Lys Gln Leu Val Ser Leu Gly Pro Glu Lys Ser Val Glu
 1145 1150 1155

Gly Gln Asn Phe Leu Ser Glu Lys Asn Lys Val Val Val Gly Lys

1160						1165						1170					
Gly	Glu	Phe	Thr	Lys	Asp	Val	Gly	Leu	Lys	Glu	Met	Val	Phe	Pro			
1175						1180					1185						
Ser	Ser	Arg	Asn	Leu	Phe	Leu	Thr	Asn	Leu	Asp	Asn	Leu	His	Glu			
1190						1195					1200						
Asn	Asn	Thr	His	Asn	Gln	Glu	Lys	Lys	Ile	Gln	Glu	Glu	Ile	Glu			
1205						1210					1215						
Lys	Lys	Glu	Thr	Leu	Ile	Gln	Glu	Asn	Val	Val	Leu	Pro	Gln	Ile			
1220						1225					1230						
His	Thr	Val	Thr	Gly	Thr	Lys	Asn	Phe	Met	Lys	Asn	Leu	Phe	Leu			
1235						1240					1245						
Leu	Ser	Thr	Arg	Gln	Asn	Val	Glu	Gly	Ser	Tyr	Asp	Gly	Ala	Tyr			
1250						1255					1260						
Ala	Pro	Val	Leu	Gln	Asp	Phe	Arg	Ser	Leu	Asn	Asp	Ser	Thr	Asn			
1265						1270					1275						
Arg	Thr	Lys	Lys	His	Thr	Ala	His	Phe	Ser	Lys	Lys	Gly	Glu	Glu			
1280						1285					1290						
Glu	Asn	Leu	Glu	Gly	Leu	Gly	Asn	Gln	Thr	Lys	Gln	Ile	Val	Glu			
1295						1300					1305						
Lys	Tyr	Ala	Cys	Thr	Thr	Arg	Ile	Ser	Pro	Asn	Thr	Ser	Gln	Gln			
1310						1315					1320						
Asn	Phe	Val	Thr	Gln	Arg	Ser	Lys	Arg	Ala	Leu	Lys	Gln	Phe	Arg			
1325						1330					1335						
Leu	Pro	Leu	Glu	Glu	Thr	Glu	Leu	Glu	Lys	Arg	Ile	Ile	Val	Asp			
1340						1345					1350						
Asp	Thr	Ser	Thr	Gln	Trp	Ser	Lys	Asn	Met	Lys	His	Leu	Thr	Pro			
1355						1360					1365						
Ser	Thr	Leu	Thr	Gln	Ile	Asp	Tyr	Asn	Glu	Lys	Glu	Lys	Gly	Ala			
1370						1375					1380						
Ile	Thr	Gln	Ser	Pro	Leu	Ser	Asp	Cys	Leu	Thr	Arg	Ser	His	Ser			
1385						1390					1395						
Ile	Pro	Gln	Ala	Asn	Arg	Ser	Pro	Leu	Pro	Ile	Ala	Lys	Val	Ser			
1400						1405					1410						
Ser	Phe	Pro	Ser	Ile	Arg	Pro	Ile	Tyr	Leu	Thr	Arg	Val	Leu	Phe			
1415						1420					1425						
Gln	Asp	Asn	Ser	Ser	His	Leu	Pro	Ala	Ala	Ser	Tyr	Arg	Lys	Lys			
1430						1435					1440						
Asp	Ser	Gly	Val	Gln	Glu	Ser	Ser	His	Phe	Leu	Gln	Gly	Ala	Lys			
1445						1450					1455						
Lys	Asn	Asn	Leu	Ser	Leu	Ala	Ile	Leu	Thr	Leu	Glu	Met	Thr	Gly			
1460						1465					1470						

Asp	Gln	Arg	Glu	Val	Gly	Ser	Leu	Gly	Thr	Ser	Ala	Thr	Asn	Ser
1475						1480					1485			
Val	Thr	Tyr	Lys	Lys	Val	Glu	Asn	Thr	Val	Leu	Pro	Lys	Pro	Asp
1490						1495					1500			
Leu	Pro	Lys	Thr	Ser	Gly	Lys	Val	Glu	Leu	Leu	Pro	Lys	Val	His
1505						1510					1515			
Ile	Tyr	Gln	Lys	Asp	Leu	Phe	Pro	Thr	Glu	Thr	Ser	Asn	Gly	Ser
1520						1525					1530			
Pro	Gly	His	Leu	Asp	Leu	Val	Glu	Gly	Ser	Leu	Leu	Gln	Gly	Thr
1535						1540					1545			
Glu	Gly	Ala	Ile	Lys	Trp	Asn	Glu	Ala	Asn	Arg	Pro	Gly	Lys	Val
1550						1555					1560			
Pro	Phe	Leu	Arg	Val	Ala	Thr	Glu	Ser	Ser	Ala	Lys	Thr	Pro	Ser
1565						1570					1575			
Lys	Leu	Leu	Asp	Pro	Leu	Ala	Trp	Asp	Asn	His	Tyr	Gly	Thr	Gln
1580						1585					1590			
Ile	Pro	Lys	Glu	Glu	Trp	Lys	Ser	Gln	Glu	Lys	Ser	Pro	Glu	Lys
1595						1600					1605			
Thr	Ala	Phe	Lys	Lys	Lys	Asp	Thr	Ile	Leu	Ser	Leu	Asn	Ala	Cys
1610						1615					1620			
Glu	Ser	Asn	His	Ala	Ile	Ala	Ala	Ile	Asn	Glu	Gly	Gln	Asn	Lys
1625						1630					1635			
Pro	Glu	Ile	Glu	Val	Thr	Trp	Ala	Lys	Gln	Gly	Arg	Thr	Glu	Arg
1640						1645					1650			
Leu	Cys	Ser	Gln	Asn	Pro	Pro	Val	Leu	Lys	Arg	His	Gln	Arg	Glu
1655						1660					1665			
Ile	Thr	Arg	Thr	Thr	Leu	Gln	Ser	Asp	Gln	Glu	Glu	Ile	Asp	Tyr
1670						1675					1680			
Asp	Asp	Thr	Ile	Ser	Val	Glu	Met	Lys	Lys	Glu	Asp	Phe	Asp	Ile
1685						1690					1695			
Tyr	Asp	Glu	Asp	Glu	Asn	Gln	Ser	Pro	Arg	Ser	Phe	Gln	Lys	Lys
1700						1705					1710			
Thr	Arg	His	Tyr	Phe	Ile	Ala	Ala	Val	Glu	Arg	Leu	Trp	Asp	Tyr
1715						1720					1725			
Gly	Met	Ser	Ser	Ser	Pro	His	Val	Leu	Arg	Asn	Arg	Ala	Gln	Ser
1730						1735					1740			
Gly	Ser	Val	Pro	Gln	Phe	Lys	Lys	Val	Val	Phe	Gln	Glu	Phe	Thr
1745						1750					1755			
Asp	Gly	Ser	Phe	Thr	Gln	Pro	Leu	Tyr	Arg	Gly	Glu	Leu	Asn	Glu
1760						1765					1770			

42

2075	2080	2085
Trp Ile Lys Val Asp Leu Leu Ala Pro Met Ile Ile His Gly Ile 2090 2095 2100		
Lys Thr Gln Gly Ala Arg Gln Lys Phe Ser Ser Leu Tyr Ile Ser 2105 2110 2115		
Gln Phe Ile Ile Met Tyr Ser Leu Asp Gly Lys Lys Trp Gln Thr 2120 2125 2130		
Tyr Arg Gly Asn Ser Thr Gly Thr Leu Met Val Phe Phe Gly Asn 2135 2140 2145		
Val Asp Ser Ser Gly Ile Lys His Asn Ile Phe Asn Pro Pro Ile 2150 2155 2160		
Ile Ala Arg Tyr Ile Arg Leu His Pro Thr His Tyr Ser Ile Arg 2165 2170 2175		
Ser Thr Leu Arg Met Glu Leu Met Gly Cys Asp Leu Asn Ser Cys 2180 2185 2190		
Ser Met Pro Leu Gly Met Glu Ser Lys Ala Ile Ser Asp Ala Gln 2195 2200 2205		
Ile Thr Ala Ser Ser Tyr Phe Thr Asn Met Phe Ala Thr Trp Ser 2210 2215 2220		
Pro Ser Lys Ala Arg Leu His Leu Gln Gly Arg Ser Asn Ala Trp 2225 2230 2235		
Arg Pro Gln Val Asn Asn Pro Lys Glu Trp Leu Gln Val Asp Phe 2240 2245 2250		
Gln Lys Thr Met Lys Val Thr Gly Val Thr Thr Gln Gly Val Lys 2255 2260 2265		
Ser Leu Leu Thr Ser Met Tyr Val Lys Glu Phe Leu Ile Ser Ser 2270 2275 2280		
Ser Gln Asp Gly His Gln Trp Thr Leu Phe Phe Gln Asn Gly Lys 2285 2290 2295		
Val Lys Val Phe Gln Gly Asn Gln Asp Ser Phe Thr Pro Val Val 2300 2305 2310		
Asn Ser Leu Asp Pro Pro Leu Leu Thr Arg Tyr Leu Arg Ile His 2315 2320 2325		
Pro Gln Ser Trp Val His Gln Ile Ala Leu Arg Met Glu Val Leu 2330 2335 2340		
Gly Cys Glu Ala Gln Asp Leu Tyr 2345 2350		

<210> 31
 <211> 1471
 <212> DNA
 <213> Homo sapiens

<400> 31

atggcgccccg tcgccgtctg ggcgcgcgtg gccgtcggac tggagctctg ggctgcggcg
60

caagccttgc ccgccaggt ggcatttaca ccctacgcc cggagcccgg gagcacatgc
120

cggctcagag aatactatga ccagacagct cagatgtgct gcagcaaatag ctgcgcgggc
180

caacatgcaa aagtcttctg taccaagacc tcggacaccg tgtgtgactc ctgtgaggac
240

agcacatata ccagctctg gaactgggtt ccgagtgct tgagctgtgg ctcccgtgt
300

agctctgacc aggtggaaac tcaagcctgc actcgggaac agaaccgcat ctgcacctgc
360

aggccccggt ggtactgccc gctgagcaag caggaggggt gccggctgtg cgcgcgcgtg
420

cgcaagtgcc gcccgggctt cggcgtggcc agaccaggaa ctgaaacatc agacgtggtg
480

tgcaagccct gtgccccggg gacgttctcc aacacgactt catccacgga tatttgcagg
540

ccccaccaga tctgtaacgt ggtggccatc cctgggaatg caagcatgga tgcagtctgc
600

acgtccacgt cccccaccg gagtatggcc ccaggggcag tacacttacc ccagccagtg
660

tccacacgat cccaacacac gcagccaact ccagaacca gcactgctcc aagcacctcc
720

ttcctgctcc caatgggccc cagcccccca gctgaaggga gcactggcga cttcgctctt
780

ccagttggac tgattgtggg tgtgacagcc ttgggtotac taataatagg agtgggtgaac
840

tgtgtcatca tgaccaggt gaaaaagaag cccttgtgcc tgacagaga agccaagggtg
900

cctcacttgc ctgccgataa ggcccgggggt acacagggcc ccgagcagca gcacctgctg
960

atcacagcgc cgagctccag cagcagctcc ctggagagct cggccagtgc gttggacaga
1020

aggcgcccca ctcggaacca gccacaggca ccaggcgtgg aggcagtggt ggccggggag
1080

ggccggggcca gcaccgggag ctcagattct tcccctggtg gccatgggac ccaggtcaat
1140

gtcacctgca tcgtgaacgt ctgtagcagc tctgaccaca gctcacagtg ctctcccaa
1200

gccagctcca caatgggaga cacagattcc agcccctcgg agtccccgaa ggacgagcag
1260

gtcccccttct ccaaggagga atgtgccttt cggtcacagc tggagacgcc agagaccctg
1320

ctggggagca ccgaagagaa gcccctgccc cttaggagtgc ctgatgctgg gatgaagccc
1380

agttaaccag gccggtgtgg gctgtgtcgt agccaaggtg ggctgagccc tggcaggatg
1440

accctgcgaa ggggccctgg tccttcagg c
1471

<210> 32
<211> 461
<212> PRT
<213> Homo sapiens

<400> 32
Met Ala Pro Val Ala Val Trp Ala Ala Leu Ala Val Gly Leu Glu Leu
1 5 10 15
Trp Ala Ala Ala His Ala Leu Pro Ala Gln Val Ala Phe Thr Pro Tyr
20 25 30
Ala Pro Glu Pro Gly Ser Thr Cys Arg Leu Arg Glu Tyr Tyr Asp Gln
35 40 45
Thr Ala Gln Met Cys Cys Ser Lys Cys Ser Pro Gly Gln His Ala Lys
50 55 60
Val Phe Cys Thr Lys Thr Ser Asp Thr Val Cys Asp Ser Cys Glu Asp
65 70 75 80
Ser Thr Tyr Thr Gln Leu Trp Asn Trp Val Pro Glu Cys Leu Ser Cys
85 90 95
Gly Ser Arg Cys Ser Ser Asp Gln Val Glu Thr Gln Ala Cys Thr Arg
100 105 110
Glu Gln Asn Arg Ile Cys Thr Cys Arg Pro Gly Trp Tyr Cys Ala Leu
115 120 125
Ser Lys Gln Glu Gly Cys Arg Leu Cys Ala Pro Leu Arg Lys Cys Arg
130 135 140
Pro Gly Phe Gly Val Ala Arg Pro Gly Thr Glu Thr Ser Asp Val Val
145 150 155 160
Cys Lys Pro Cys Ala Pro Gly Thr Phe Ser Asn Thr Thr Ser Ser Thr
165 170 175
Asp Ile Cys Arg Pro His Gln Ile Cys Asn Val Val Ala Ile Pro Gly
180 185 190
Asn Ala Ser Met Asp Ala Val Cys Thr Ser Thr Ser Pro Thr Arg Ser
195 200 205
Met Ala Pro Gly Ala Val His Leu Pro Gln Pro Val Ser Thr Arg Ser

210	215	220
Gln His Thr Gln Pro Thr Pro Glu Pro Ser Thr Ala Pro Ser Thr Ser :		
225	230	235 240
Phe Leu Leu Pro Met Gly Pro Ser Pro Pro Ala Glu Gly Ser Thr Gly		
	245	250 255
Asp Phe Ala Leu Pro Val Gly Leu Ile Val Gly Val Thr Ala Leu Gly		
	260	265 270
Leu Leu Ile Ile Gly Val Val Asn Cys Val Ile Met Thr Gln Val Lys		
	275	280 285
Lys Lys Pro Leu Cys Leu Gln Arg Glu Ala Lys Val Pro His Leu Pro		
	290	295 300
Ala Asp Lys Ala Arg Gly Thr Gln Gly Pro Glu Gln Gln His Leu Leu		
	305	310 315 320
Ile Thr Ala Pro Ser Ser Ser Ser Ser Ser Leu Glu Ser Ser Ala Ser		
	325	330 335
Ala Leu Asp Arg Arg Ala Pro Thr Arg Asn Gln Pro Gln Ala Pro Gly		
	340	345 350
Val Glu Ala Ser Gly Ala Gly Glu Ala Arg Ala Ser Thr Gly Ser Ser		
	355	360 365
Asp Ser Ser Pro Gly Gly His Gly Thr Gln Val Asn Val Thr Cys Ile		
	370	375 380
Val Asn Val Cys Ser Ser Ser Asp His Ser Ser Gln Cys Ser Ser Gln		
	385	390 395 400
Ala Ser Ser Thr Met Gly Asp Thr Asp Ser Ser Pro Ser Glu Ser Pro		
	405	410 415
Lys Asp Glu Gln Val Pro Phe Ser Lys Glu Glu Cys Ala Phe Arg Ser		
	420	425 430
Gln Leu Glu Thr Pro Glu Thr Leu Leu Gly Ser Thr Glu Glu Lys Pro		
	435	440 445
Leu Pro Leu Gly Val Pro Asp Ala Gly Met Lys Pro Ser		
	450	455 460

<210> 33

<211> 1475

<212> DNA

<213> Homo sapiens

<400> 33

tccacctgtc cccgcagcgc cggctcgcgc cctcctgcgc cagccaccga gccgccgtct
60

agcgccccga cctcgcacc atgagagccc tgctggcgcg cctgcttctc tgcgtcctgg
120

tctgtagcga ctccaaaggc agcaatgaac ttcataaagt tccatcgaac tgtgactgtc
180

taaatggagg aacatgtgtg tccaacaagt acttctccaa cattcactgg tgcaactgcc
240

caaagaaatt cggagggcag cactgtgaaa tagataagtc aaaaacctgc tatgagggga
300

atggtcactt ttaccgagga aaggccagca ctgacaccat gggcgggcc tgccctgccct
360

ggaactctgc cactgtcctt cagcaaagc accatgccca cagatctgat gctcttcagc
420

tgggcctggg gaaacataat tactgcagga acccagacaa ccggaggcga ccctgggtgct
480

atgtgcaggc gggcctaaag ccgcttgtcc aagagtgcac ggtgcatgac tgcgcagatg
540

gaaaaaagcc ctctctctct ccagaagaat taaaatttca gtgtggccaa aagactctga
600

ggccccgctt taagattatt gggggagaat tcaccaccat cgagaaccag ccctgggttg
660

cggccatcta caggaggcac cgggggggct ctgtcaccta cgtgtgtgga ggcagcctca
720

tcagcccttg ctgggtgatc agcgccacac actgcttcat tgattacca aagaaggagg
780

actacatcgt ctacctgggt cgtcaaggc ttaactccaa cacgcaaggg gagatgaagt
840

ttgaggtgga aaacctcatc ctacacaagg actacagcgc tgacacgctt gtcaccaca
900

acgacattgc cttgctgaag atccgttcca aggagggcag gtgtgcgag ccatcccga
960

ctatacagac catctgcctg ccctcgatgt ataacgatcc ccagtttggc acaagctgtg
1020

agatcactgg ctttggaata gagaattcta ccgactatct ctatccggag cagctgaaga
1080

tgactgttgt gaagctgatt tcccaccggg agtgtcagca gcccactac tacggctctg
1140

aagtcaccac caaatgctg tgtgctgctg acccacagt gaaaacagat tcctgccagg
1200

gagactcagg gggacccctc gtctgttccc tccaaggccg catgactttg actggaattg
1260

tgagctgggg ccgtggatgt gccctgaagg acaagccagg cgtctacacg agagtctcac
1320

acttcttacc ctggatccgc agtcacacca aggaagagaa tggcctggcc ctctgagggg
1380

ccccagggag gaaacgggca ccaccgctt tcttgctggt tgtcattttt gcagtagagt
1440

catctccatc agctgtaaga agagactggg aagat
1475

<210> 34
<211> 431
<212> PRT
<213> Homo sapiens

<400> 34
Met Arg Ala Leu Leu Ala Arg Leu Leu Leu Cys Val Leu Val Val Ser
1 5 10 15
Asp Ser Lys Gly Ser Asn Glu Leu His Gln Val Pro Ser Asn Cys Asp
20 25 30
Cys Leu Asn Gly Gly Thr Cys Val Ser Asn Lys Tyr Phe Ser Asn Ile
35 40 45
His Trp Cys Asn Cys Pro Lys Lys Phe Gly Gly Gln His Cys Glu Ile
50 55 60
Asp Lys Ser Lys Thr Cys Tyr Glu Gly Asn Gly His Phe Tyr Arg Gly
65 70 75 80
Lys Ala Ser Thr Asp Thr Met Gly Arg Pro Cys Leu Pro Trp Asn Ser
85 90 95
Ala Thr Val Leu Gln Gln Thr Tyr His Ala His Arg Ser Asp Ala Leu
100 105 110
Gln Leu Gly Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Arg
115 120 125
Arg Arg Pro Trp Cys Tyr Val Gln Val Gly Leu Lys Pro Leu Val Gln
130 135 140
Glu Cys Met Val His Asp Cys Ala Asp Gly Lys Lys Pro Ser Ser Pro
145 150 155 160
Pro Glu Glu Leu Lys Phe Gln Cys Gly Gln Lys Thr Leu Arg Pro Arg
165 170 175
Phe Lys Ile Ile Gly Gly Glu Phe Thr Thr Ile Glu Asn Gln Pro Trp
180 185 190
Phe Ala Ala Ile Tyr Arg Arg His Arg Gly Gly Ser Val Thr Tyr Val
195 200 205
Cys Gly Gly Ser Leu Ile Ser Pro Cys Trp Val Ile Ser Ala Thr His
210 215 220
Cys Phe Ile Asp Tyr Pro Lys Lys Glu Asp Tyr Ile Val Tyr Leu Gly
225 230 235 240
Arg Ser Arg Leu Asn Ser Asn Thr Gln Gly Glu Met Lys Phe Glu Val
245 250 255
Glu Asn Leu Ile Leu His Lys Asp Tyr Ser Ala Asp Thr Leu Ala His

260 265 270
 His Asn Asp Ile Ala Leu Leu Lys Ile Arg Ser Lys Glu Gly Arg Cys
 275 280 285
 Ala Gln Pro Ser Arg Thr Ile Gln Thr Ile Cys Leu Pro Ser Met Tyr
 290 295 300
 Asn Asp Pro Gln Phe Gly Thr Ser Cys Glu Ile Thr Gly Phe Gly Lys
 305 310 315 320
 Glu Asn Ser Thr Asp Tyr Leu Tyr Pro Glu Gln Leu Lys Met Thr Val
 325 330 335
 Val Lys Leu Ile Ser His Arg Glu Cys Gln Gln Pro His Tyr Tyr Gly
 340 345 350
 Ser Glu Val Thr Thr Lys Met Leu Cys Ala Ala Asp Pro Gln Trp Lys
 355 360 365
 Thr Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Ser Leu
 370 375 380
 Gln Gly Arg Met Thr Leu Thr Gly Ile Val Ser Trp Gly Arg Gly Cys
 385 390 395 400
 Ala Leu Lys Asp Lys Pro Gly Val Tyr Thr Arg Val Ser His Phe Leu
 405 410 415
 Pro Trp Ile Arg Ser His Thr Lys Glu Glu Asn Gly Leu Ala Leu
 420 425 430

 <210> 35
 <211> 107
 <212> PRT
 <213> Mus musculus

 <400> 35
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15
 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Val Asn Thr Ala
 20 25 30
 Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
 35 40 45
 Tyr Ser Ala Ser Phe Leu Tyr Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Arg Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80
 Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln His Tyr Thr Thr Pro Pro
 85 90 95
 Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
 100 105

<210> 36
 <211> 120

<212> PRT

<213> Mus musculus

<400> 36

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly
 1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Ile Lys Asp Thr
 20 25 30

Tyr Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45

Ala Arg Ile Tyr Pro Thr Asn Gly Tyr Thr Arg Tyr Ala Asp Ser Val
 50 55 60

Lys Gly Arg Phe Thr Ile Ser Ala Asp Thr Ser Lys Asn Thr Ala Tyr
 65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95

Ser Arg Trp Gly Gly Asp Gly Phe Tyr Ala Met Asp Tyr Trp Gly Gln
 100 105 110

Gly Thr Leu Val Thr Val Ser Ser
 115 120

<210> 37

<211> 120

<212> PRT

<213> Mus musculus

<400> 37

Gln Val Thr Leu Arg Glu Ser Gly Pro Ala Leu Val Lys Pro Thr Gln
 1 5 10 15

Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Ser
 20 25 30

Gly Met Ser Val Gly Trp Ile Arg Gln Pro Ser Gly Lys Ala Leu Glu
 35 40 45

Trp Leu Ala Asp Ile Trp Trp Asp Asp Lys Lys Asp Tyr Asn Pro Ser
 50 55 60

Leu Lys Ser Arg Leu Thr Ile Ser Lys Asp Thr Ser Lys Asn Gln Val
 65 70 75 80

Val Leu Lys Val Thr Asn Met Asp Pro Ala Asp Thr Ala Thr Tyr Tyr
 85 90 95

Cys Ala Arg Ser Met Ile Thr Asn Trp Tyr Phe Asp Val Trp Gly Ala
 100 105 110

Gly Thr Thr Val Thr Val Ser Ser
 115 120

<210> 38

<211> 106

<212> PRT

<213> Mus musculus

<400> 38

Asp Ile Gln Met Thr Gln Ser Pro Ser Thr Leu Ser Ala Ser Val Gly
 1 5 10 15

Asp Arg Val Thr Ile Thr Cys Lys Cys Gln Leu Ser Val Gly Tyr Met
 20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Trp Ile Tyr
 35 40 45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly Ser
 50 55 60

Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Asp
 65 70 75 80

Asp Phe Ala Thr Tyr Tyr Cys Phe Gln Gly Ser Gly Tyr Pro Phe Thr
 85 90 95

Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
 100 105

<210> 39

<211> 1039

<212> DNA

<213> Homo sapiens

<400> 39

tcctgcacag gcagtgcctt gaagtgcctc ttcagagacc tttcttcata gactactttt
 60

ttttctttaa gcagcaaaag gagaaaattg tcatcaaagg atattccaga ttcttgacag
 120

cattctcgtc atctctgagg^aacatcacat catctcagga tgaggggcat gaagctgctg
 180

ggggcgctgc tggcactggc ggccctactg cagggggccg tgtccctgaa gatcgcagcc
 240

ttcaacatcc agacatttgg ggagaccaag atgtccaatg ccaccctcgt cagctacatt
 300

gtgcagatcc tgagccgcta tgacatcgcc ctgggtccagg aggtcagaga cagccacctg
 360

actgccgtgg ggaagctgct ggacaacctc aatcaggatg caccagacac ctatcactac
 420

gtggtcagtg agccactggg acggaacagc tataaggagc gctacctgtt cgtgtacagg
 480

cctgaccagg tgtctgcggt ggacagctac tactacgatg atggctgcga gccctgcggg
 540

aacgacacct tcaaccgaga gccagccatt gtcaggttct tctcccgggt cacagaggtc
 600

agggagtgtg ccattgttcc cctgcatgcg gccccggggg acgcagtagc cgagatcgac
660

gctctctatg acgtctacct ggatgtccaa gagaaatggg gcttggagga cgtcatgttg
720

atgggcgact tcaatgcggg ctgcagctat gtgagaccct ccagtggtc atccatccgc
780

ctgtggacaa gccccacctt ccagtggtg atccccgaca gcgctgacac cacagctaca
840

cccacgcact gtgcctatga caggatcgtg gttgcagga tgctgctccg aggcgcggtt
900

gttcccgact cggctcttcc ctttaacttc caggctgcct atggcctgag tgaccaactg
960

gcccagcca tcagtgacca ctatccagtg gaggtgatgc tgaagtgagc agccccctccc
1020

cacaccagtt gaactgcag
1039

<210> 40
<211> 282
<212> PRT
<213> Homo sapiens

<400> 40
Met Arg Gly Met Lys Leu Leu Gly Ala Leu Leu Ala Leu Ala Ala Leu
1 5 10 15
Leu Gln Gly Ala Val Ser Leu Lys Ile Ala Ala Phe Asn Ile Gln Thr
20 25 30
Phe Gly Glu Thr Lys Met Ser Asn Ala Thr Leu Val Ser Tyr Ile Val
35 40 45
Gln Ile Leu Ser Arg Tyr Asp Ile Ala Leu Val Gln Glu Val Arg Asp
50 55 60
Ser His Leu Thr Ala Val Gly Lys Leu Leu Asp Asn Leu Asn Gln Asp
65 70 75 80
Ala Pro Asp Thr Tyr His Tyr Val Val Ser Glu Pro Leu Gly Arg Asn
85 90 95
Ser Tyr Lys Glu Arg Tyr Leu Phe Val Tyr Arg Pro Asp Gln Val Ser
100 105 110
Ala Val Asp Ser Tyr Tyr Tyr Asp Asp Gly Cys Glu Pro Cys Gly Asn
115 120 125
Asp Thr Phe Asn Arg Glu Pro Ala Ile Val Arg Phe Phe Ser Arg Phe
130 135 140
Thr Glu Val Arg Glu Phe Ala Ile Val Pro Leu His Ala Ala Pro Gly
145 150 155 160
Asp Ala Val Ala Glu Ile Asp Ala Leu Tyr Asp Val Tyr Leu Asp Val

165

170

175

Gln Glu Lys Trp Gly Leu Glu Asp Val Met Leu Met Gly Asp Phe Asn
 180 185 190

Ala Gly Cys Ser Tyr Val Arg Pro Ser Gln Trp Ser Ser Ile Arg Leu
 195 200 205

Trp Thr Ser Pro Thr Phe Gln Trp Leu Ile Pro Asp Ser Ala Asp Thr
 210 215 220

Thr Ala Thr Pro Thr His Cys Ala Tyr Asp Arg Ile Val Val Ala Gly
 225 230 235 240

Met Leu Leu Arg Gly Ala Val Val Pro Asp Ser Ala Leu Pro Phe Asn
 245 250 255

Phe Gln Ala Ala Tyr Gly Leu Ser Asp Gln Leu Ala Gln Ala Ile Ser
 260 265 270

Asp His Tyr Pro Val Glu Val Met Leu Lys
 275 280

<210> 41
 <211> 678
 <212> DNA
 <213> Mus musculus

<400> 41
 gacatcttgc tgactcagtc tccagccatc ctgtctgtga gtccaggaga aagagtcagt
 60

ttctcctgca gggccagtca gtctgttggc tcaagcatcc actggtatca gcaaagaaca
 120

aatggttctc caaggcttct cataaagtat gcttctgagt ctatgtctgg gatcccttcc
 180

aggttttagtg gcagtggatc agggacagat ttactotta gcatcaacac tgtggagtct
 240

gaagatattg cagattatta ctgtcaacaa agtcatagct ggccattcac gttcggctcg
 300

gggacaaaatt tggaagttaa agaagtgaag cttgaggagt ctggaggagg cttggtgcaa
 360

cctggaggat ccatgaaaact ctctgtgtt gcctctggat tcattttcag taaccactgg
 420

atgaactggg tccgccagtc tccagagaag gggcttgagt gggttgctga aattagatca
 480

aaatctatta attctgcaac acattatgcg gagtctgtga aaggagggtt caccatctca
 540

agagatgatt ccaaaagtgc tgtctacctg caaatgaccg acttaagaac tgaagacact
 600

ggcgtttatt actgttccag gaattactac ggtagtacct acgactactg gggccaaggc
 660

accactctca cagtctcc
678

<210> 42
<211> 226
<212> PRT
<213> Mus musculus

<400> 42
Asp Ile Leu Leu Thr Gln Ser Pro Ala Ile Leu Ser Val Ser Pro Gly
1 5 10 15
Glu Arg Val Ser Phe Ser Cys Arg Ala Ser Gln Phe Val Gly Ser Ser
20 25 30
Ile His Trp Tyr Gln Gln Arg Thr Asn Gly Ser Pro Arg Leu Leu Ile
35 40 45
Lys Tyr Ala Ser Glu Ser Met Ser Gly Ile Pro Ser Arg Phe Ser Gly
50 55 60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Ser Ile Asn Thr Val Glu Ser
65 70 75 80
Glu Asp Ile Ala Asp Tyr Tyr Cys Gln Gln Ser His Ser Trp Pro Phe
85 90 95
Thr Phe Gly Ser Gly Thr Asn Leu Glu Val Lys Glu Val Lys Leu Glu
100 105 110
Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Met Lys Leu Ser
115 120 125
Cys Val Ala Ser Gly Phe Ile Phe Ser Asn His Trp Met Asn Trp Val
130 135 140
Arg Gln Ser Pro Glu Lys Gly Leu Glu Trp Val Ala Glu Ile Arg Ser
145 150 155 160
Lys Ser Ile Asn Ser Ala Thr His Tyr Ala Glu Ser Val Lys Gly Arg
165 170 175
Phe Thr Ile Ser Arg Asp Asp Ser Lys Ser Ala Val Tyr Leu Gln Met
180 185 190
Thr Asp Leu Arg Thr Glu Asp Thr Gly Val Tyr Tyr Cys Ser Arg Asn
195 200 205
Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln Gly Thr Thr Leu Thr
210 215 220

Val Ser
225

<210> 43
<211> 450
<212> DNA
<213> Homo sapiens

<400> 43

gctgcatcag aagaggccat caagcacatc actgtccttc tgccatggcc ctgtggatgc
60

gcctcctgcc cctgctggcg ctgctggccc tctggggacc tgaccagcc gcagcctttg
120

tgaaccaaca cctgtgcggc tcacacctgg tggaagctct ctacctagtg tgcggggaac
180

gaggtcttct ctacacacc aagaccgcc gggaggcaga ggacctgcag gtggggcagg
240

tggagctggg cgggggccct ggtgcaggca gcctgcagcc cttggccctg gaggggtccc
300

tgcagaagcg tggcattgtg gaacaatgct gtaccagcat ctgtccctc taccagctgg
360

agaactactg caactagacg cagcccgag gcagcccccc acccgccgcc tctgtcacccg
420

agagagatgg aataaagccc ttgaaccagc
450

<210> 44
<211> 110
<212> PRT
<213> Homo sapiens

<400> 44
Met Ala Leu Trp Met Arg Leu Leu Pro Leu Leu Ala Leu Leu Ala Leu
1 5 10 15
Trp Gly Pro Asp Pro Ala Ala Ala Phe Val Asn Gln His Leu Cys Gly
20 25 30
Ser His Leu Val Glu Ala Leu Tyr Leu Val Cys Gly Glu Arg Gly Phe
35 40 45
Phe Tyr Thr Pro Lys Thr Arg Arg Glu Ala Glu Asp Leu Gln Val Gly
50 55 60
Gln Val Glu Leu Gly Gly Gly Pro Gly Ala Gly Ser Leu Gln Pro Leu
65 70 75 80
Ala Leu Glu Gly Ser Leu Gln Lys Arg Gly Ile Val Glu Gln Cys Cys
85 90 95
Thr Ser Ile Cys Ser Leu Tyr Gln Leu Glu Asn Tyr Cys Asn
100 105 110

<210> 45
<211> 1203
<212> DNA
<213> Hepatitis B virus

<400> 45
atgggaggtt ggtcttccaa acctcgacaa ggcattggga cgaatctttc tgttcccaat
60

cctctgggat tctttccga tcaccagttg gacctgcgt tcggagccaa ctccaaat
120

ccagattggg acttcaacc caacaaggat cactggccag aggcaatcaa ggtaggagcg
180

ggagacttcg ggccagggtt caccaccca caggcggtc tttggggtg gagccctcag
240

gctcaggga tattgacaac agtgccagca gcgcctctc ctgtttccac caatcggcag
300

tcaggaagac agcctactcc catctctcca cctctaagag acagtcctcc tcaggccatg
360

cagtggaaact ccacaacatt ccaccaagct ctgctagatc ccagagttag gggcctatat
420

tttctgctg gtggctccag ttccggaaca gtaaaccctg ttccgactac tgtctcacc
480

atatogtcaa tcttctcgag gactggggac cctgcaccga acatggagag cacaacatca
540

ggattcctag gacctctgct cgtgttacag gcggggttt tcttggtgac aagaatctc
600

acaataccac agagtctaga ctgctgggtg acttctctca atttcttagg gggagcacc
660

acgtgtcctg gccaaaattc gcagtcccca acctccaatc actcaccac ctcttgctc
720

ccaatttgc ctggttatcg ctggatgtgt ctggggcgtt ttatcatatt cctcttcac
780

ctgctgctat gctcatctt cttgttggtt cttctggact accaaggat gttgccggt
840

tgtctctac ttccaggaac atcaactacc agcacgggac catgcaagac ctgcacgatt
900

cctgctcaag gaacctctat gtttccctct tgttgctgta caaaccttc ggacggaaac
960

tgcacttgta ttcccatccc atcatctcg gctttcgcaa gattcctatg ggagtgggc
1020

tcagtcggtt tctctgggt cagtttacta gtgccatttg ttcagtgggt cgcagggtt
1080

tccccactg tttggctttc agttatatgg atgatgtgtt attgggggac aagtctgtac
1140

aacatcttga gtccctttt acctctatta ccaattttct tttgtctttg ggtatacatt
1200

tga
1203

<210> 46

<211> 400
 <212> PRT
 <213> Hepatitis B virus

<400> 46

Met Gly Gly Trp Ser Ser Lys Pro Arg Gln Gly Met Gly Thr Asn Leu
 1 5 10 15

Ser Val Pro Asn Pro Leu Gly Phe Phe Pro Asp His Gln Leu Asp Pro
 20 25 30

Ala Phe Gly Ala Asn Ser Asn Asn Pro Asp Trp Asp Phe Asn Pro Asn
 35 40 45

Lys Asp His Trp Pro Glu Ala Ile Lys Val Gly Ala Gly Asp Phe Gly
 50 55 60

Pro Gly Phe Thr Pro Pro His Gly Gly Leu Leu Gly Trp Ser Pro Gln
 65 70 75 80

Ala Gln Gly Ile Leu Thr Thr Val Pro Ala Ala Pro Pro Pro Val Ser
 85 90 95

Thr Asn Arg Gln Ser Gly Arg Gln Pro Thr Pro Ile Ser Pro Pro Leu
 100 105 110

Arg Asp Ser His Pro Gln Ala Met Gln Trp Asn Ser Thr Thr Phe His
 115 120 125

Gln Ala Leu Leu Asp Pro Arg Val Arg Gly Leu Tyr Phe Pro Ala Gly
 130 135 140

Gly Ser Ser Ser Gly Thr Val Asn Pro Val Pro Thr Thr Val Ser Pro
 145 150 155 160

Ile Ser Ser Ile Phe Ser Arg Thr Gly Asp Pro Ala Pro Asn Met Glu
 165 170 175

Ser Thr Thr Ser Gly Phe Leu Gly Pro Leu Leu Val Leu Gln Ala Gly
 180 185 190

Phe Phe Leu Leu Thr Arg Ile Leu Thr Ile Pro Gln Ser Leu Asp Ser
 195 200 205

Trp Trp Thr Ser Leu Asn Phe Leu Gly Gly Ala Pro Thr Cys Pro Gly
 210 215 220

Gln Asn Ser Gln Ser Pro Thr Ser Asn His Ser Pro Thr Ser Cys Pro
 225 230 235 240

Pro Ile Cys Pro Gly Tyr Arg Trp Met Cys Leu Arg Arg Phe Ile Ile
 245 250 255

Phe Leu Phe Ile Leu Leu Leu Cys Leu Ile Phe Leu Leu Val Leu Leu
 260 265 270

Asp Tyr Gln Gly Met Leu Pro Val Cys Pro Leu Leu Pro Gly Thr Ser
 275 280 285

Thr Thr Ser Thr Gly Pro Cys Lys Thr Cys Thr Ile Pro Ala Gln Gly
 290 295 300

Thr Ser Met Phe Pro Ser Cys Cys Cys Thr Lys Pro Ser Asp Gly Asn
305 310 315 320

Cys Thr Cys Ile Pro Ile Pro Ser Ser Trp Ala Phe Ala Arg Phe Leu
325 330 335

Trp Glu Trp Ala Ser Val Arg Phe Ser Trp Leu Ser Leu Leu Val Pro
340 345 350

Phe Val Gln Trp Phe Ala Gly Leu Ser Pro Thr Val Trp Leu Ser Val
355 360 365

Ile Trp Met Met Trp Tyr Trp Gly Pro Ser Leu Tyr Asn Ile Leu Ser
370 375 380

Pro Phe Leu Pro Leu Leu Pro Ile Phe Phe Cys Leu Trp Val Tyr Ile
385 390 395 400

<210> 47

<211> 799

<212> DNA

<213> Homo sapiens

<400> 47

cgaaccactc agggtcctgt ggacagctca octagctgca atggctacag gctcccggac
60

gtccctgctc ctggcttttg gctgctctg octgcoctgg cttcaagagg gcagtgcctt
120

cccaaccatt cccttatcca ggccttttga caacgctatg ctccggcgcc atcgtctgca
180

ccagctggcc tttgacacct accaggagtt tgaagaagcc tatatcccaa aggaacagaa
240

gtattcattc ctgcagaacc ccagacctc cctotgtttc tcagagtcta ttccgacacc
300

ctccaacagg gaggaacac aacagaaatc caacctagag ctgctccgca tctccctgct
360

gctcatccag tctgtggctgg agcccgtgca gttcctcagg agtgtcttcg ccaacagcct
420

ggtgtacggc gctctgaca gcaacgtcta tgacctccta aaggacctag aggaaggcat
480

ccaaacgctg atggggaggc tggaagatgg cagccccgg actgggcaga tcttcaagca
540

gacctacagc aagttcgaca caaactcaca caacgatgac gcactactca agaactacgg
600

gctgctctac tgcttcagga aggacatgga caaggtcgag acattcctgc gcctcgtgca
660

gtgcccgtct gtggagggca gctgtggctt ctagctgcc ggggtggcat cctgtgaccc
720

ctccccagtg cctctcctgg ccttggaagt tgccactcca gtgcccacca gccctgtcct
780

aataaaatta agttgcac
799

<210> 48
<211> 217
<212> PRT
<213> Homo sapiens

<400> 48
Met Ala Thr Gly Ser Arg Thr Ser Leu Leu Leu Ala Phe Gly Leu Leu
1 5 10 15
Cys Leu Pro Trp Leu Gln Glu Gly Ser Ala Phe Pro Thr Ile Pro Leu
20 25 30
Ser Arg Pro Phe Asp Asn Ala Met Leu Arg Ala His Arg Leu His Gln
35 40 45
Leu Ala Phe Asp Thr Tyr Gln Glu Phe Glu Glu Ala Tyr Ile Pro Lys
50 55 60
Glu Gln Lys Tyr Ser Phe Leu Gln Asn Pro Gln Thr Ser Leu Cys Phe
65 70 75 80
Ser Glu Ser Ile Pro Thr Pro Ser Asn Arg Glu Glu Thr Gln Gln Lys
85 90 95
Ser Asn Leu Glu Leu Leu Arg Ile Ser Leu Leu Leu Ile Gln Ser Trp
100 105 110
Leu Glu Pro Val Gln Phe Leu Arg Ser Val Phe Ala Asn Ser Leu Val
115 120 125
Tyr Gly Ala Ser Asp Ser Asn Val Tyr Asp Leu Leu Lys Asp Leu Glu
130 135 140
Glu Gly Ile Gln Thr Leu Met Gly Arg Leu Glu Asp Gly Ser Pro Arg
145 150 155 160
Thr Gly Gln Ile Phe Lys Gln Thr Tyr Ser Lys Phe Asp Thr Asn Ser
165 170 175
His Asn Asp Asp Ala Leu Leu Lys Asn Tyr Gly Leu Leu Tyr Cys Phe
180 185 190
Arg Lys Asp Met Asp Lys Val Glu Thr Phe Leu Arg Ile Val Gln Cys
195 200 205
Arg Ser Val Glu Gly Ser Cys Gly Phe
210 215

<210> 49
<211> 963
<212> DNA
<213> Homo sapiens

<400> 49

atggagacag acacactcct gttatgggtg ctgctgctct gggtccagg ttccactggc
60

gacgtcaggc gagggcccg gagcctgcgg ggcagggacg cgccagcccc cacgccctgc
120

gtcccggccg agtgcttcga cctgctggtc cgccactgcg tggcctgcgg gctcctgcgg
180

acgccgcggc cgaaaccggc cggggccagc agccctgcgc ccaggacggc gctgcagccg
240

caggagtggg tgggcgcggg ggccggcgag gcggcggtcg acaaaactca cacatgccca
300

ccgtgccag cacctgaact cctgggggga ccgtcagtct tcctcttccc cccaaaaccc
360

aaggacacc tcattgatctc ccggaccctt gaggtcacat gcgtgggtgt ggacgtgagc
420

caagaagacc ctgaggtcaa gttcaactgg tacgtggacg gcgtggaggt gcataatgcc
480

aagacaaagc cgcgggagga gcagtacaac agcacgtacc gtgtgggtcag cgtcctcacc
540

gtcctgcacc aggactggct gaatggcaag gagtacaagt gcaaggtctc caacaaagcc
600

ctcccagccc ccattcgagaa aaccattctc aaagccaaag ggcagccccg agaaccacag
660

gtgtacaccc tgccccatc ccgggatgag ctgaccaaga accaggtcag cctgacctgc
720

ctgggtcaaag gctttctatc cagcgacatc gccgtggagt gggagagcaa tgggcagccg
780

gagaacaact acaagaccac gcctcccggtg ttggactccg acggctcctt ctctctctac
840

agcaagctca ccgtggacaa gacaggtgg cagcagggga acgtcttctc atgtcccggtg
900

atgcatgagg ctctgcacaa ccactacag cagaagagcc tctccctgtc tcccgggaaa
960

tga
963

<210> 50
<211> 320
<212> PRT
<213> Homo sapiens

<400> 50
Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro
1 5 10 15

Gly Ser Thr Gly Asp Val Arg Arg Gly Pro Arg Ser Leu Arg Gly Arg

```
<210> 51
<211> 107
<212> PRT
<213> Homo sapiens
```

<400> 51

Asp Ile Gln Met Thr Gln Thr Pro Ser Thr Leu Ser Ala Ser Val Gly
 1 5 10 15

Asp Arg Val Thr Ile Ser Cys Arg Ala Ser Gln Asp Ile Asn Asn Tyr
 20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile
 35 40 45

Tyr Tyr Thr Ser Thr Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80

Asp Asp Phe Ala Thr Tyr Phe Cys Gln Gln Gly Asn Thr Leu Pro Trp
 85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Val Lys
 100 105

<210> 52

<211> 107

<212> PRT

<213> Mus musculus

<400> 52

Asp Ile Gln Met Thr Gln Thr Thr Ser Ser Leu Ser Ala Ser Leu Gly
 1 5 10 15

Asp Arg Val Thr Ile Ser Cys Arg Ala Ser Gln Asp Ile Asn Asn Tyr
 20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Ile Val Lys Leu Leu Ile
 35 40 45

Tyr Tyr Thr Ser Thr Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60

Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser Asn Leu Glu Gln
 65 70 75 80

Glu Asp Ile Ala Thr Tyr Phe Cys Gln Gln Gly Asn Thr Leu Pro Trp
 85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
 100 105

<210> 53

<211> 119

<212> PRT

<213> Homo sapiens

<400> 53

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ala Phe Thr Asn Tyr
 20 25 30

Leu Ile Glu Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45

Gly Val Ile Tyr Pro Gly Ser Gly Gly Thr Asn Tyr Asn Glu Lys Phe
 50 55 60

Lys Gly Arg Val Thr Leu Thr Val Asp Glu Ser Thr Asn Thr Ala Tyr
 65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Phe Cys
 85 90 95

Ala Arg Arg Asp Gly Asn Tyr Gly Trp Phe Ala Tyr Trp Gly Gln Gly
 100 105 110

Thr Leu Val Thr Val Ser Ser
 115

<210> 54
 <211> 119
 <212> PRT
 <213> Mus musculus

<400> 54
 Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Gly Pro Gly Thr
 1 5 10 15

Ser Val Arg Val Ser Cys Lys Ala Ser Gly Tyr Ala Phe Thr Asn Tyr
 20 25 30

Leu Ile Glu Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45

Gly Val Ile Tyr Pro Gly Ser Gly Gly Thr Asn Tyr Asn Glu Lys Phe
 50 55 60

Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Thr Thr Ala Tyr
 65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Asp Asp Ser Ala Val Tyr Phe Cys
 85 90 95

Ala Arg Arg Asp Gly Asn Tyr Gly Trp Phe Ala Tyr Trp Gly Arg Gly
 100 105 110

Thr Leu Val Thr Val Ser Ala
 115

<210> 55
 <211> 214
 <212> PRT
 <213> Homo sapiens

<400> 55
 Asp Ile Gln Met Thr Gln Thr Pro Ser Thr Leu Ser Ala Ser Val Gly
 1 5 10 15

Asp Arg Val Thr Ile Ser Cys Arg Ala Ser Gln Asp Ile Asn Asn Tyr
 20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile

35

40

45

Tyr Tyr Thr Ser Thr Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80
 Asp Asp Phe Ala Thr Tyr Phe Cys Gln Gln Gly Asn Thr Leu Pro Trp
 85 90 95
 Thr Phe Gly Gln Gly Thr Lys Val Glu Val Lys Arg Thr Val Ala Ala
 100 105 110
 Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly
 115 120 125
 Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala
 130 135 140
 Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln
 145 150 155 160
 Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser
 165 170 175
 Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr
 180 185 190
 Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser
 195 200 205
 Phe Asn Arg Gly Glu Cys
 210
 <210> 56
 <211> 448
 <212> PRT
 <213> Homo sapiens
 <400> 56
 Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1 5 10 15
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ala Phe Thr Asn Tyr
 20 25 30
 Leu Ile Glu Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile
 35 40 45
 Gly Val Ile Tyr Pro Gly Ser Gly Gly Thr Asn Tyr Asn Glu Lys Phe
 50 55 60
 Lys Gly Arg Val Thr Leu Thr Val Asp Glu Ser Thr Asn Thr Ala Tyr
 65 70 75 80
 Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Phe Cys
 85 90 95
 Ala Arg Arg Asp Gly Asn Tyr Gly Trp Phe Ala Tyr Trp Gly Gln Gly
 100 105 110

Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe
 115 120 125
 Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu
 130 135 140
 Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp
 145 150 155 160
 Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu
 165 170 175
 Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser
 180 185 190
 Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro
 195 200 205
 Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys
 210 215 220
 Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro
 225 230 235 240
 Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser
 245 250 255
 Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp
 260 265 270
 Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn
 275 280 285
 Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val
 290 295 300
 Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu
 305 310 315 320
 Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys
 325 330 335
 Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr
 340 345 350
 Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr
 355 360 365
 Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu
 370 375 380
 Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu
 385 390 395 400
 Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys
 405 410 415
 Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu
 420 425 430

Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly
 435 440 445

<210> 57
 <211> 8540
 <212> DNA
 <213> Homo sapiens

<400> 57
 gacgtcgcgg ccgctctagg cctccaaaaa agcctcctca ctacttctgg aatagctcag
 60
 aggcgagggc ggctcgggcc tctgcataaa taaaaaaaaat tagtcagcca tgcattggggc
 120
 ggagaatggg cggaactggg cggagttagg ggcgggatgg gcggagttag gggcgggact
 180
 atggttgctg actaattgag atgcatgctt tgcatacttc tgcttgctgg ggagcctggg
 240
 gactttccac acctgggttc tgactaattg agatgcatgc tttgcatact tctgctgct
 300
 ggggagcctg gggactttcc acaccctaac tgacacacat tccacagaat taattcccct
 360
 agttattaat agtaatcaat tacgggggtca ttagttcata gcccatatat ggagttccgc
 420
 gttacataac ttacggtaaa tggcccgctt ggctgaccgc ccaacgaccc ccgcccattg
 480
 acgtcaataa tgacgtatgt tcccatagta acgccaatag ggactttcca ttgacgtcaa
 540
 tgggtggact atttacggtt aactgcccac ttggcagtac atcaagtgtt tcatatgcc
 600
 agtaccccc ctattgacgt caatgacggt aaatggcccg cctggcatta tgcccagtac
 660
 atgaccttat gggactttcc tacttggcag tacatctaag tattagtcac cgctattacc
 720
 atggtgatgc ggttttggca gtacatcaat gggcgtggat agcggtttga ctcacgggga
 780
 tttccaagtc tccaccccat tgacgtcaat gggagtttgt tttggcacca aaatcaacgg
 840
 gactttccaa aatgtcgtaa caactccgcc ccattgacgc aaatgggagg taggcgtgta
 900
 cgggtgggagg tctatataag cagagctggg tacgtgaacc gtcagatcgc ctggagacgc
 960
 catcacagat ctctcaccat gaggggtccc gctcagctcc tggggctcct gctgctctgg
 1020

ctcccaggtg cacgatgtga tggtagcaag gtggaaatca aacgtacggt ggctgcacca
1080

tctgtcttca tcttcccgc atctgatgag cagttgaaat ctggaactgc ctctgttgtg
1140

tgcctgctga ataacttcta tcccagagag gccaaagtac agtggaaggt ggataacgcc
1200

ctccaatcgg gtaactccca ggagagtgtc acagagcagg acagcaagga cagcacctac
1260

agcctcagca gcaccctgac gctgagcaaa gcagactacg agaaacacaa agtctacgcc
1320

tgcgaagtca cccatcaggg cctgagctcg cccgtcacia agagcttcaa caggggagag
1380

tgttgaattc agatccgtta acggttacca actacctaga ctggattcgt gacaacatgc
1440

ggccgtgata tctacgtatg atcagcctcg actgtgcctt ctagttgcca gccatctgtt
1500

gtttgccccct ccccgctgcs ttccttgacc ctggaaggtg ccaactccac tgtcctttcc
1560

taataaaatg aggaaattgc atcgatttgt ctgagtaggt gtcattctat tctgggggggt
1620

ggggtggggc aggacagcaa gggggaggat tgggaagaca atagcaggca tgctggggat
1680

gcggtgggct ctatggaacc agctggggct cgacagctat gccaaagtacg cccctattg
1740

acgtcaatga cggtaaattg ccgcctggc attatgcca gtacatgacc ttatgggact
1800

ttcctacttg gcagtacatc tacgtattag tcatcgctat taccatgggtg atgcggtttt
1860

ggcagtacat caatgggctg ggatagcgtt ttgactcacg gggatttcca agtctccacc
1920

ccattgacgt caatgggagt ttgttttggc accaaaatca acgggacttt ccaaatgtc
1980

gtaacaactc cgccccattg acgcaaatgg gcggtaggcg tgtacgggtg gaggtctata
2040

taagcagagc tgggtacgtc ctacattca gtgatcagca ctgaacacag acccgtcgac
2100

atgggttggg gcctcatctt gctcttctt gtcgctgttg ctacgctgt cgctagcacc
2160

aagggcccat cgggtcttccc cctggcacc tctccaaga gcacctctgg gggcacagcg
2220

gccctgggct gcctgggtcaa ggactacttc cccgaaccgg tgacgggtgct gtggaacctca
2280

ggcgccctga ccagcggcgt gcacaccttc ccggctgtcc tacagtcttc aggactctac
2340

tccctcagca gcgtgggtgac cgtgccctcc agcagcttgg gcacccagac ctacatctgc
2400

aacgtgaatc acaagcccag caacaccaag gtggacaaga aagcagagcc caaatcttgt
2460

gacaaaactc acacatgccc accgtgcccga gcacctgaac tcctgggggg accgtcagtc
2520

ttcctcttcc ccccaaaacc caaggacacc ctcatgatct cccggacccc tgaggtcaca
2580

tgcggtgggtg tggacgtgag ccacgaagac cctgaggtca agttcaactg gtacgtggac
2640

ggcgtggagg tgcataatgc caagacaaag ccgcgggagg agcagtacaa cagcacgtac
2700

cgtgtgggtca gcgtcctcac cgtcctgcac caggactggc tgaatggcaa ggactacaag
2760

tgcaaggtct ccaacaaagc cctcccagcc cccatcgaga aaaccatctc caaagccaaa
2820

gggcagcccc gagaaccaca ggtgtacacc ctgccccat cccgggatga gctgaccagg
2880

aaccagggtca gcctgacctg cctgggtcaaa ggcttctatc ccagcgacat cgcctggag
2940

tgggagagca atgggcagcc ggagaacaac tacaagacca cgctcccggt gctggactcc
3000

gacggctcct tcttctctta cagcaagctc accgtggaca agagcagggtg gcagcagggg
3060

aacgtcttct catgctccgt gatgcatgag gctctgcaca accactacac gcagaagagc
3120

ctctccctgt ctccgggtaa atgaggatcc gttaacggtt accaactacc tagactggat
3180

tcgtgacaac atgcggccgt gatctctacg tatgatcagc ctgactgtg ctttctagtt
3240

gccagccatc tgttggtttgc cctcccccg tgccttctt gacctggaa ggtgccactc
3300

ccactgtcct ttctaataa aatgaggaaa ttgcatcgca ttgtctgagt aggtgtcatt
3360

ctattctggg ggggtgggtg gggcaggaca gcaaggggga ggattgggaa gacaatagca
3420

ggcatgctgg ggatgcggtg ggctctatgg aaccagctgg ggctcgacag cgctggatct
3480

cccgatcccc agctttgctt ctcaatttct tatttgata atgagaaaaa aaggaaaatt
3540

aattttaaca ccaattcagt agttgattga gcaaatgcgt tgccaaaaag gatgctttag
3600

agacagtgtt ctctgcacag ataaggacaa acattattca gagggagtag ccagagctga
3660

gactcctaag ccagtgagtg gcacagcatt ctagggagaa atatgcttgt catcaccgaa
3720

gcttgattcc gtagagccac accttggtta gggccaatct gctcacacag gatagagagg
3780

gcaggagcca gggcagagca tataagggtga ggtaggatca gttgctcctc acatttgctt
3840

ctgacatagt tgtgttgga gcttggatag cttggacagc tcagggctgc gatttcgctg
3900

caaacttgac ggcaatccta gcgtgaaggc tggtaggatt ttatccccgc tgccatcatg
3960

gttcgaccat tgaactgcat cgtcgccgtg tccaaaaata tggggattgg caagaacgga
4020

gacctaccct ggctccgct caggaacgag ttcaagtact tccaaagaat gaccacaacc
4080

tcttcagtgg aaggtaaaca gaatctggtg attatgggta ggaaaacctg gttctccatt
4140

cctgagaaca atcgacctt aaaggacaga attaatatag ttctcagtag agaactcaaa
4200

gaaccaccac gaggagctca ttttcttgcc aaaagtttgg atgatgcctt aagacttatt
4260

gaacaaccgg aattggcaag taaagtagac atggtttgga tagtcggagg cagttctgtt
4320

taccaggaag ccatgaatca accaggccac cttagaactct ttgtgacaag gatcatgcag
4380

gaatttgaaa gtgacacgtt tttcccagaa attgatttgg ggaaatataa acttctccca
4440

gaataccag gcgtcctctc tgagggtccag gaggaaaaag gcatcaagta taagtttgaa
4500

gtctacgaga agaaagacta acaggaagat gctttcaagt tctctgctcc cctcctaaag
4560

tcatgcattt ttataagacc atgggacttt tgctggcttt agatcagcct cgactgtgcc
4620

ttctagttgc cagccatctg ttgtttgccc ctccccctg ccttccttga ccctggaagg
4680

tgccactccc actgtccttt cctaataaaa tgaggaaatt gcatcgatt gtctgagtag
4740

gtgtcattct attctggggg gtggggtggg gcaggacagc aagggggagg attgggaaga
4800

caatagcagg catgctgggg atgcggtggg ctctatggaa ccagctgggg ctcgagctac
4860

tagctttgct tctcaatttc ttatttgcatt aatgagaaaa aaaggaaaat taattttaac
4920

accaattcag tagttgattg agcaaatgcg ttgccaaaaa ggatgcttta gagacagtgt
4980

tctctgcaca gataaggaca aacattattc agagggagta cccagagctg agactcctaa
5040

gccagtgagt ggcacagcat tctagggaga aatatgcttg tcatcaccga agcctgattc
5100

cgtagagcca caccttggtg agggccaatc tgctcacaca ggatagagag ggcaggagcc
5160

agggcagagc atataaggtg aggtaggatc agttgctcct cacatttgct tctgacatag
5220

ttgtgttggg agcttggtgc gatcctctat ggttgaacaa gatggattgc acgcaggttc
5280

tccggccgct tgggtggaga ggctattcgg ctatgactgg gcacaacaga caatcggctg
5340

ctctgatgcc gccgtgttcc ggctgtcagc gcagggggcg ccggttcttt ttgtcaagac
5400

cgacctgtcc ggtgccctga atgaactgca ggacgaggca gcgcggctat cgtggctggc
5460

cacgacgggc gttccttgcg cagctgtgct cgacgttgct actgaagcgg gaagggactg
5520

gctgctattg ggcgaagtgc cggggcagga tctcctgtca tctcaccttg ctctgcca
5580

gaaagtatcc atcatggctg atgcaatgcg gcggctgcat acgcttgatc cggctacctg
5640

cccattcgac caccaagcga aacatcgcat cgagcgagca cgtactcgga tggaagccgg
5700

tcttgtogat caggatgatc tggacgaaga gcatcagggg ctgcgccag ccgaactgtt
5760

cgccaggctc aaggcgcgca tgcccagcgg cgaggatctc gtcgtgacct atggcgatgc
5820

ctgcttgccg aatatcatgg.tggaaaatgg ccgcttttct ggattcatcg acgtggtg
5880

gctgggtgtg ggggaccgct atcaggacat agcgttggct acccgtgata ttgctgaaga
5940

gcttgccggc gaatgggctg aocgcttctt cgtgctttac ggtatcgccg cttcccgatt
6000

cgcagcgc atgccttctat cgccttcttg acgagttctt ctgagcggga ctctgggggt
6060

cgaaatgacc gaccaagcga cgcccaacct gccatcacga gatttcgatt ccaccgccg
6120

cttctatgaa aggttgggct tcggaatcgt tttccgggac gccggctgga tgatcctcca
6180

gcgcggggat ctcatgctgg agttcttcgc ccacccaac ttgtttattg cagcttataa
6240

tggttacaaa taaagcaata gcatcacaaa tttcacaaat aaagcatttt tttcaactga
6300

ttctagtgtt ggtttgtcca aactcatcaa totatcttat catgtotgga tcgcggccgc
6360

gatcccgctg agagcttggc gtaatcatgg tcatagctgt ttctgtgtg aaattgttat
6420

ccgctcacaa ttccacacaa catagcagcc ggagcataaa gtgtaaagcc tgggggtgcct
6480

aatgagttag ctaactcaca ttaattgogt tgcgctcaat gcccgcttcc cagtcgggaa
6540

acctgtcgtg ccagctgc ataatgaatcg gccaacgcgc ggggagaggc ggtttgcgta
6600

ttgggcgctc ttccgcttcc tcgctcaactg actcgtcgcg ctgggtcgtt cggctgcggc
6660

gagcggatc agctcaactca aaggcggtaa tacggttatc cacagaatca ggggataacg
6720

caggaaagaa catgtgagca aaaggccagc aaaaggccag gaaccgtaaa aaggccgcgt
6780

tgctggcggt tttccatagg ctccgcccc ctgacgagca tcacaaaaat cgacgctcaa
6840

gtcagagggt gcgaaacccg acaggactat aaagatacca ggcgtttccc cctggaagct
6900

ccctogtgcg ctctcctgtt ccgacctgc cgcttaccgg atacctgtcc gcctttctcc
6960

cttcgggaag cgtggcgctt tctcaatgct cagcgtgtag gtatctcagt tcgggtgtagg
7020

tgtttcgctc caagctgggc tgtgtgcaag aacccccgt tcagcccgac cgtgcgcct
7080

tatccggtaa ctatcgtctt ggtccaacc cggtaagaca cgacttatcg ccactggcag
7140

cagccactgg taacaggatt agcagagcga ggtatgtagg cggtgctaca gagttcttga
7200

agtgggtggc taactacggc tacactagaa ggacagtatt tggatatctgc gctctgctga
7260

agccagttac cttcggaaaa agagttggta gctcttgatc cggcaaaaa accaccgctg
7320

gtagcgggtgg tttttttgtt tgcaagcagc agattacgcg cagaaaaaaaa ggtctcaag
7380

aagatccttt gatcttttct acgggggtctg acgctcagtg gaacgaaaac tcacgttaag
7440

ggatttttgt catgagatta tcaaaaagga tcttcaccta gatcctttta aattaataat
7500

gaagttttta atcaatctaa agtatatatg agtaaacttg gtctgacagt taccaatgct
7560

taatcagtga ggcacctatc tcagcgatct gtctatttcg ttcattcata gttgcctgac
7620

tccccgtcgt gtagataact acgatacggg agggcttacc atctggcccc agtgctgcaa
7680

tgataccgcg agaccacgc tcaccggctc cagatttatc agcaataaac cagccagccg
7740

gaagggccga ggcgagaagt ggtcctgcaa ctttatccgc ctccatccag tctattaatt
7800

gttgccggga agctagagta agtagttgc cagttaatag tttgcgcaac gttgttgcca
7860

ttgctacagg catcgtggtg tcacgctcgt cgtttggtat ggcttcattc agctccggtt
7920

cccaacgata aaggcgagtt acatgatccc ccatgttggtg caaaaaagcg gttagctcct
7980

tcggctcctcc gatcgttgtc agaagtaagt tggcgcagtg gttatcactc atgggttatgg
8040

cagcactgca taattctctt actgtcatgc catccgtaag atgcttttct gtgactgggtg
8100

agtactcaac caagtcattc tgagaatagt gtagcgggcg accgagttgc tottgcccgg
8160

cgtcaatacg ggataatacc gcgccacata gcagaacttt aaaagtgtc atcattggaa
8220

aacgttcttc ggggcgaaaa.ctctcaagga tcttaccgct gttgagatcc agttcgatgc
8280

aacccaactcg tgcacccaac tgatcttcag catcttttac tttcaccagc gtttctgggt
8340

gagcaaaaaac aggaaggcaa aatgccgcaa aaaagggaat aagggcgaca cggaaatgtt
8400

gaatactcat actcttcctt tttcaatatt attgaagcat ttatcagggt tattgtctca
8460

tgagcggata catatttgaa tgtattttaga aaaataaaca aataggggtt ccgcgcacat
8520

ttccccgaaa agtgccacct
8540

<210> 58

<211> 9209

<212> DNA

<213> Mus musculus

<400> 58

gacgtcgagg ccgctctagg cctccaaaa agcctcctca ctacttctgg aatagctcag
60

aggccgaggc ggcctcggcc tctgcataaa taaaaaaat tagtcagcca tgcattggggc
120

ggagaatggg cggaactggg cggagttagg ggcgggatgg gcggagttag gggcgggaact
180

atggttgctg actaattgag atgcatgctt tgcatacttc tgcttctgg ggagcctggg
240

gactttccac acctggttgc tgactaattg agatgcatgc tttgcatact tctgcctgct
300

ggggagcctg gggactttcc acaccctaac tgacacacat tccacagaat taattcccct
360

agttattaat agtaatcaat tacgggggtca ttagttcata gccatatat ggagttccgc
420

gttacataac ttacggtaaa tggcccgctt ggctgaccgc ccaacgaccc ccgcccattg
480

acgtcaataa tgacgtatgt tcccatagta acgccaatag ggactttcca ttgacgtcaa
540

tgggtggact atttacggta aactgccac ttggcagtac atcaagtgt tcatatgcc
600

agtaaccccc ctattgacgt caatgacggt aaatggcccc cctggcatta tgcccagtac
660

atgaoccttat gggactttcc tacttggcag tacatctacg tattagtcac cgtattacc
720

atggtgatgc ggTTTTggca gtacatcaat gggcgtggat accggttga CTCACGCGGA
780

tttccaagtc tccaccccat tgacgtcaat gggagtttgt tttggcacca aatcaacgg
840

gactttccaa aatgtcgtaa caactccgcc ccattgacgc aaatgggagg taggcgtgta
900

cggtgggagg tctatataag cagagctggg tacgtgaacc gtcagatcgc ctggagacgc
960

catcacagat ctctcactat ggattttcag gtgcagatta tcagcttcct gctaactcagt
1020

gcttcagtc taatgtccag aggacaaatt gttctctccc agtctccagc aatcctgtct
1080

gcactctccag gggagaaggc cacaatgact tgcagggccca gctcaagtgt aagttacatc
1140

cactgggtcc agcagaagcc aggatcctcc cccaaaccct ggatttatgc cacatccaac
1200

ctggcttctg gagtccctgt tcgcttcagt ggcagtgggt ctgggacttc ttactctctc
1260

acaatcagca gagtggaggc tgaagatgct gccacttatt actgccagca gtggactagt
1320

aaccaccca cgttcggagg ggggaccaag ctggaaatca aacgtacggt ggctgcacca
1380

tctgtcttca tcttcccgcc atctgatgag cagttgaaat ctggaaactgc ctctgttgtg
1440

tgcctgctga ataacttcta tccagagag gccaaagtac agtgggaagg ggataacgcc
1500

ctccaatcgg gtaactcca ggagagtgtc acagagcagg acagcaagga cagcacctac
1560

agcctcagca gcacctgac gctgagcaaa gcagactacg agaaacacaa agtctacgcc
1620

tgcgaagtca cccatcaggc cctgagctcg ccggtcaca agagcttcaa caggggagag
1680

tggtgaattc agatcogtta acggttacca actacctaga ctggattcgt gacaacatgc
1740

ggcgtgata tctacgtatg atcagcctcg actgtgcctt ctagttgcc gccatctgtt
1800

gtttgcccct ccccggtgcc ttccctgacc ctggaagggt ccactccac tgtcctttcc
1860

taataaaatg aggaaattgc atcgcatgtg ctgagtaggt gtcattctat tctggggggg
1920

ggggtgggc aggacagcaa gggggaggat tgggaagaca atagcaggca tgctggggat
1980

gcggtgggct ctatggaacc agctggggct cgacagctat gccaaagtacg cccctattg
2040

acgtcaatga cggtaaattgg ccgcctggc attatgccc gtacatgacc ttatgggact
2100

ttctacttg gcagtacatc tacgtattag tcatcgctat taccatgggtg atgcgggttt
2160

ggcagtacat caatgggcgt ggatagcggg ttgactcacg gggatttcca agtctccacc
2220

ccattgacgt caatgggagt ttgttttggc accaaaatca acgggacttt ccaaaatgtc
2280

gtaacaactc cgtcccatg acgcaaatgg gcggtaggcg tgtacgggtg gaggtctata
2340

taagcagagc tgggtacgtc ctacattca gtgatcagca ctgaacacag acccgctcag
2400

atgggttga gcctcatctt gctcttcctt gtcgctgttg ctacgcgtgt cctgtcccag
2460

gtacaactgc agcagcctgg ggctgagctg gtgaagcctg gggcctcagt gaagatgtcc
2520

tgcaaggctt ctggctacac attaccagt tacaatatgc actgggtaaa acagacacct
2580

ggtcggggcc tggaatgat tggagctatt tatccggaa atggtgatac ttctacaat
2640

cagaagtca aaggcaaggc cacattgact gcagacaaat cctccagcac agcctacatg
2700

cagctcagca gcctgacatc tgaggactct ggggtctatt actgtgcaag atcgacttac
2760

tacggcgggtg actggtactt caatgtctgg ggcgcaggga ccaaggtcac cgtctctgca
2820

gctagacca agggcccatc ggtcttcccc ctggcaccct cctccaagag cacctctggg
2880

ggcacagcgg cctgggctg cctgggtcaag gactacttcc ccgaaccggg gacgggtgtcg
2940

tggaactcag gcgcctgac cagcggcgtg cacaccttcc cggctgtcct acagtctca
3000

ggactctact cctcagcag cgtgggtgacc gtgccctcca gcagcttggg caccagacc
3060

tacatctgca acgtgaatca caagcccagc aacaccaagg tggacaagaa agcagagccc
3120

aaatcttgtg acaaaactca..cacatgccc cctgtgcccag cacctgaact cctgggggga
3180

cgtcagttt tctctttccc cccaaaaccc aaggacaccc tcatgatctc cgggacccct
3240

gaggtcacat gcgtgggtgtt ggacgtgagc cacgaagacc ctgaggtcaa gttcaactgg
3300

tacgtggacg gcgtggaggt gcataatgcc aagacaaaagc cgcggggagga gcagtacaac
3360

agcacgtacc gtgtgggtcag cgtcctcacc gtcctgcacc aggactggct gaatggcaag
3420

gagtacaagt gcaagggtctc caacaaagcc ctcccagccc ccatcgagaa aacctctcc
3480

aaagccaaag ggcagccccc agaaccacag gtgtacaccc tgcccccatc cggggatgag
3540

ctgaccaaga accagggtcag cctgacctgc ctggtcaaag gcttctatcc cagcgacatc
3600

gccgtggagt gggagagcaa tgggcagccg gagaacaact acaagaccac gcctcccggtg
3660

ctggactccg acgggtcctt cttcctctac agcaagctca cgtgggacaa gagcagggtgg
3720

cagcagggga acgtcttctc atgctccgtg atgcatgagg ctctgcacaa ccactacacg
3780

cagaagagcc tctccctgtc tccgggtaaa tgaggatccg ttaacgggta ccaactacct
3840

agactggatt cgtgacaaca tgccggcgtg atatctacgt atgacagcc tgcactgtgc
3900

cttctagttg ccagccatct gttgtttgcc cctcccccggt gccttccttg accctggaag
3960

gtgccactcc cactgtcctt tctaataaaa atgaggaaat tgcacgcat tgtctgagta
4020

ggtgtcattc tattctgggg ggtgggggtgg ggcaggacag caagggggag gattgggaag
4080

acaatagcag gcatgctggg gatgcgggtgg gctctatgga accagctggg gctcgacagc
4140

gctggatctc ccatcccca gctttgcttc tcaatttctt atttgcataa tgagaaaaaa.
4200

aggaaaatta attttaacac caattcagta gttgattgag caaatgcgtt gccaaaaagg
4260

atgctttaga gacagtgttc totgcacaga taaggacaaa cattattcag agggagtacc
4320

cagagctgag actcctaagc cagtgagtgg cacagcattc tagggagaaa tatgcttgc
4380

atcaccgaag cctgattccg tagagccaca ccttggttaag ggccaatctg ctcacacagg
4440

atagagaggg caggagccag ggcagagcat ataaggtgag gtaggatcag ttgctcctca
4500

catttgcttc tgacatagtt gtgttgggag cttggatagc ttggacagct cagggtctgcg
4560

atttcgcgcc aaacttgacg gcaatcctag cgtgaaggct ggtaggattt tatccccgct
4620

gccatcatgg ttcgaccatt gaactgcac gtgcgcgtgt cccaaaatat ggggattggc
4680

aagaacggag acctaccctg gcctccgctc aggaacgagt tcaagtactt ccaaagaatg
4740

accacaacct cttcagtggg aggtaaacag aatctggtga ttatgggtag gaaaacctgg
4800

ttctccattc ctgagaagaa tcgaccttta aaggacagaa ttaatatagt totcagtaga
4860

gaactcaaag aaccaccacg aggagctcat tttcttgcca aaagtttgga tgatgcctta
4920

agacttattg aacaaccgga attggcaagt aaagtagaca tggtttggtat agtcggaggg
4980

agttctgttt accaggaagc catgaatcaa ccaggccacc ttagactctt tgtgacaagg
5040

atcatgcagg aatttgaaag tgacacgttt ttcccagaaa ttgatttggt gaaatataaa
5100

cttctcccag aatacccagg cgtcctctct gaggtccagg aggaaaaagg catcaagtat
5160

aagtttgaag totacgagaa gaaagactaa caggaagatg ctttcaagtt ctctgctccc
5220

ctcctaaagc tatgcatttt tataagacca tgggactttt gctggcttta gatcagcctc
5280

gactgtgcct totagtggcc agccatctgt tgtttgcccc tcccccgctc cttecttgac
5340

cctggaagggt gccactccca ctgtcctttc ctaataaaat gaggaaattg catgcattg
5400

tctgagttagg tgtcattcta ttctgggggg tggggtgggg caggacagca agggggagga
5460

ttgggaagac aatagcaggc atgctgggga tgcggtgggc tctatggaac cagctggggc
5520

tcgagctact agcttttgctt ctcaatttct tatttgcata atgagaaaaa aaggaaaatt
5580

aattttaaca ccaattcagt agttgattga gcaaatacgt tgccaaaaag gatgcttttag
5640

agacagtgtt ctctgcacag ataaggacaa acattattca gagggagtag ccagagctga
5700

gactcctaag ccagttagtg gcacagcatt ctagggagaa atatgcttgt catcacgaa
5760

gcctgattcc gtagagccac accttggtta gggccaatct gtcacacag gatagagagg
5820

gcaggagcca gggcagagca tataagggtga ggtaggatca gttgctctct acatttgctt
5880

ctgacatagt tgtgttgga gcttggtatg atcctctatg gttgaacaag atggattgca
5940

cgcaggttct ccggccgctt gggtaggag gctattcggc tatgactggg cacaacagac
6000

aatcggtgc tctgatgccg ccgtgttccg gctgtcagcg cagggggcgcc cggttctttt
6060

tgtcaagacc gacctgtccg gtgcctgaa tgaactgcag gacgaggcag cgcggctatc
6120

gtggctggcc acgacgggcg ttccttgccg agctgtgctc gacgttgtca ctgaagcggg
6180

aagggactgg ctgctattgg gcgaagtgc ggggcaggat ctctgtcat ctcaccttgc
6240

tcctgccgag aaagtatcca tcatggctga tgcaatggg cggtgcata cgcttgatcc
6300

ggctacctgc ccattcgacc accaagcgaa acatcgcatc gagcgagcac gtactcggat
6360

ggaagccggt cttgtcgatc aggatgatct ggacgaagag catcaggggc tcgcgccagc
6420

cgaactgttc gccaggctca aggccgcat gcccgacggc gaggatctcg tcgtgaccca
6480

tggcgatgcc tgcttgccga atatcatggt ggaaaatggc cgcttttctg gattcatcga
6540

ctgtggccgg ctgggtgtgg cggaccgcta tcaggacata gcgttgcta cccgtgatat
6600

tgctgaagag cttggcgggc aatgggtga ccgcttctc gtgctttacg gtatcgccgc
6660

tcccgattcg cagcgcatcg ccttctatcg ccttcttgac gagttcttct gagcgggact
6720

ctgggggttcg aaatgaccga ccaagcgacg cccaacctgc catcacgaga ttctgattcc
6780

accgcccgcct tctatgaaag gttgggcttc ggaatcgttt tccgggacgc cggctggatg
6840

atcctccagc gcggggatct catgctggag ttcttcgccc accccaactt gtttattgca
6900

gcttataatg gttacaaata aagcaatagc atcacaaatt tcacaaataa agcatttttt
6960

tcactgcatt ctagttgtgg ttgtccaaa ctcacaaatc tatcttatca tgtctggatc
7020

gcggccgcga tcccgctcag agcttggcgt aatcatggc atagctgttt cctgtgtgaa
7080

attgttatcc gctcacaaatt ccacacaaca tacgagccgg aagcataaag tgtaaagcct
7140

ggggtgccta atgagtgagc taactcacat taattgcgtt gcgctcactg cccgctttcc
7200

agtcgggaaa cctgtcgtgc cagctgcatt aatgaatcgg ccaacgcgcg gggagaggcg
7260

gtttgcgtat tgggcgctct tccgcttcct cgctcactga ctcgctgogc tcggctgttc
7320

ggctgcggcg agcggatatca gctcactcaa aggcggtaat acggttatcc acagaatcag
7380

gggataacgc aggaagaac atgtgagcaa aaggccagca aaaggccagg aaccgtaaaa
7440

aggccgcgtt gctggcgttt ttccatagge tccgcccccc tgacgagcat cacaaaaatc
7500

gacgctcaag tcagaggtgg cgaaaccoga caggactata aagataccag gcgtttcccc
7560

ctggaagctc cctcgtgogc tctcctgttc cgacctgcc gcttacogga tacctgtcog
7620

cccttctccc ttcgggaagc gtggcgcttt ctcaatgctc acgctgtagg tatctcagtt
7680

cggtgtaggt cgttcgctcc aagctgggct gtgtgcacga accccccgtt cagcccgacc
7740

gctgcgcctt atccggtaac tatcgtcttg agtccaaccc ggtaagacac gacttatcgc
7800

cactggcagc agccactggt aacaggatta gcagagcgag gtatgtaggc ggtgctacag
7860

agttcttgaa gtggtggcct aactacggct acactagaag gacagtattt ggtatctgcg
7920

ctctgctgaa gccagttacc ttccggaaaaa gagttggtag ctcttgatcc ggcaaaaaa
7980

ccaccgctgg tagcgggtgt ttttttgtt gcaagcagca gattacgcgc agaaaaaaag
8040

gatctcaaga agatcctttg atcttttcta cgggggtctga cgctcagtgg aacgaaaact
8100

cacgttaagg gattttggtc atgagattat caaaaaggat cttcacctag atccttttaa
8160

attaaaaatg aagttttaaa tcaatctaaa gtatatatga gtaaacttgg tctgacagtt
8220

accaatgctt aatcagttag gcacctatct cagcgatctg tctatttcgt tcatccatag
8280

ttgcctgact ccccgctctg tagataacta cgatacggga gggcttacca tctggcccca
8340

gtgctgcaat gataccgcga gaccacgct caccggctcc agatttatca gcaataaacc
8400

agccagccgg aagggccgag cgcagaagtg gtcctgcaac tttatccgcc tccatccagt
8460

ctattaattg ttgcccggaa gctagagtaa gtagttcgcc agttaatagt ttgcgcaacg
8520

ttgttgccat tgctacaggc atcgtggtgt cagcctcgtc gtttggtatg gcttcattca
8580

gctccggttc ccaacgatca aggcgagtta catgatcccc catgttggtc aaaaaagcgg
8640

ttagctcctt cggctctccg atcgttgtca gaagtaagtt ggccgcagtg ttatcactca
8700

tggttatggc agcactgcat aattctctta ctgtcatgcc atccgtaaga tgcttttctg
8760

tgactggtga gtactcaacc aagtcattct gagaatagtg tatgcggcga ccgagttgct
8820

cttgcccggc gtcaatacgg gataatacgg cgccacatag cagaacttta aaagtgtca
8880

tcattggaaa acgtttcttcg gggcgaaaac tctcaaggat cttaccgctg ttgagatcca
8940

gttcgatgta acccactcgt gcacccaact gatcttcagc atcttttact ttcaccagcg
9000

tttctgggtg agcaaaaaa ggaaggcaaa atgccgcaaa aaagggaata agggcgacac
9060

ggaaatgttg aatactcata ctcttccttt ttcaatatta ttgaagcatt tatcagggtt
9120

attgtctcat gagcggatac atatttgaat gtatttagaa aaataaaca ataggggttc
9180

cgcgacatt tccccgaaaa gtgccacct
9209

<210> 59
<211> 384
<212> DNA
<213> Mus musculus

<400> 59
atggattttc aggtgcagat tatcagcttc ctgctaataca gtgcttcagt cataatgtcc
60

agagggcaaa ttgttctctc ccagtctcca gcaatcctgt ctgcatctcc aggggagaag
120

gtcacaatga ctgaggggc cagctcaagt gtaagttaca tccactgggt ccagcagaag
180

ccaggatcct cccccaacc ctggatttat gccacatcca acctggcttc tggagtcctt
240

gttcgcttca gtggcagtggt gtctgggact tcttactctc tcacaatcag cagagtggag
300

gctgaagatg ctgccactta ttactgccag cagtggacta gtaaccacc cacgttcgga
360

ggggggacca agctggaaat caaa
384

<210> 60
<211> 128
<212> PRT
<213> Mus musculus

<400> 60
Met Asp Phe Gln Val Gln Ile Ile Ser Phe Leu Leu Ile Ser Ala Ser
1 5 10 15

Val Ile Met Ser Arg Gly Gln Ile Val Leu Ser Gln Ser Pro Ala Ile
20 25 30

Leu Ser Ala Ser Pro Gly Glu Lys Val Thr Met Thr Cys Arg Ala Ser
35 40 45

Ser Ser Val Ser Tyr Ile His Trp Phe Gln Gln Lys Pro Gly Ser Ser
50 55 60

Pro Lys Pro Trp Ile Tyr Ala Thr Ser Asn Leu Ala Ser Gly Val Pro
65 70 75 80

Val Arg Phe Ser Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile
85 90 95

Ser Arg Val Glu Ala Glu Asp Ala Ala Thr Tyr Tyr Cys Gln Gln Trp
100 105 110

Thr Ser Asn Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
 115 120 125

<210> 61
 <211> 420
 <212> DNA
 <213> Mus musculus

<400> 61
 atgggttgga gctcatcctt gctcttcctt gtcgctgttg ctacgcgtgt cctgtcccag
 60

gtacaactgc agcagcctgg ggctgagctg gtgaagcctg gggcctcagt gaagatgtcc
 120

tgcaaggctt ctggctacac atttaccagt tacaatatgc actgggtaaa acagacacct
 180

ggtcgggggc tggaatggat tggagctatt tatcccgaa atggtgatac ttcctacaat
 240

cagaagttca aaggcaaggc cacattgact gcagacaaat cctccagcac agcctacatg
 300

cagctcagca gcctgacatc tgaggactct gcggtctatt actgtgcaag atcgacttac
 360

tacggcgggtg actggtactt caatgtctgg ggcgagggga ccacgggtcac cgtctctgca
 420

<210> 62
 <211> 140
 <212> PRT
 <213> Mus musculus

<400> 62
 Met Gly Trp Ser Leu Ile Leu Leu Phe Leu Val Ala Val Ala Thr Arg
 1 5 10 15

Val Leu Ser Gln Val Gln Leu Gln Gln Pro Gly Ala Glu Leu Val Lys
 20 25 30

Pro Gly Ala Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe
 35 40 45

Thr Ser Tyr Asn Met His Trp Val Lys Gln Thr Pro Gly Arg Gly Leu
 50 55 60

Glu Trp Ile Gly Ala Ile Tyr Pro Gly Asn Gly Asp Thr Ser Tyr Asn
 65 70 75 80

Gln Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser
 85 90 95

Thr Ala Tyr Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val
 100 105 110

Tyr Tyr Cys Ala Arg Ser Thr Tyr Tyr Gly Gly Asp Trp Tyr Phe Asn
 115 120 125

Val Trp Gly Ala Gly Thr Thr Val Thr Val Ser Ala

130

135

140

<210> 63
<211> 1395
<212> DNA
<213> Homo sapiens

<400> 63

atgtattcca atgtgatagg aactgtaacc totggaaaaa ggaagggtta tcttttgtcc
60

ttgctgctca ttggcttctg ggactgcgtg acctgtcacg ggagccctgt ggacatctgc
120

acagccaagc cgogggacat tcccatgaat cccatgtgca ttaccgctc cccggagaag
180

aaggcaactg aggatgaggg ctcagaacag aagatcccgg aggccaccaa ccggcgtgtc
240

tgggaactgt ccaaggccaa ttcccgcttt gctaccactt tctatcagca cctggcagat
300

tccaagaatg acaatgataa cattttcttg tcaccctga gtatctccac ggcttttgot
360

atgaccaagc tgggtgcctg taatgacacc ctccagcaac tgatggaggt atttaagttt
420

gacaccatat ctgagaaaac atctgatcag atccacttct tctttgcaa actgaactgc
480

cgactctatc gaaaagccaa caaatcctcc aagttagtat cagccaatcg cctttttgga
540

gacaaatccc ttaccttcaa tgagacctac caggacatca gtgagttggt atatggagcc
600

aagctccagc ccctggactt caaggaaaat gcagagcaat ccagagcggc catcaacaaa
660

tgggtgtcca ataagaccga aggccgaatc acogatgtca ttccctcgga agccatcaat
720

gagctcactg ttctgggtgct ggttaacacc atttacttca agggcctgtg gaagtcaaag
780

ttcagccctg agaacacaag gaaggaactg ttctacaagg ctgatggaga gtcgtgttca
840

gcatctatga tgtaccagga aggcaagttc cgttatcggc gcgtggctga aggcaccag
900

gtgcttgagt tgcccttcaa aggtgatgac atcaccatgg tcctcatctt gcccaagcct
960

gagaagagcc tggccaaggt ggagaaggaa ctacccccag aggtgctgca ggagtggctg
1020

gatgaattgg aggagatgat gctggtggtc cacatgcccc gcttccgcat tgaggacggc
1080

ttcagtttga aggagcagct gcaagacatg ggccttgctg atctgttcag ccctgaaaag
1140

tccaaactcc caggtattgt tgcagaaggc cgagatgacc tctatgtctc agatgcattc
1200

cataaggcat ttcttgaggt aaatgaagaa ggcagtgaag cagctgcaag taccgctgtt
1260

gtgattgctg gccgttcgct aaaccccaac agggtgactt tcaaggccaa caggcctttc
1320

ctggttttta taagagaagt tcctctgaac actattatct tcatgggcag agtagccaac
1380

ccttggtgta agtaa
1395

<210> 64
<211> 464
<212> PRT
<213> Homo sapiens

<400> 64
Met Tyr Ser Asn Val Ile Gly Thr Val Thr Ser Gly Lys Arg Lys Val
1 5 10 15

Tyr Leu Leu Ser Leu Leu Leu Ile Gly Phe Trp Asp Cys Val Thr Cys
20 25 30

His Gly Ser Pro Val Asp Ile Cys Thr Ala Lys Pro Arg Asp Ile Pro
35 40 45

Met Asn Pro Met Cys Ile Tyr Arg Ser Pro Glu Lys Lys Ala Thr Glu
50 55 60

Asp Glu Gly Ser Glu Gln Lys Ile Pro Glu Ala Thr Asn Arg Arg Val
65 70 75 80

Trp Glu Leu Ser Lys Ala Asn Ser Arg Phe Ala Thr Thr Phe Tyr Gln
85 90 95

His Leu Ala Asp Ser Lys Asn Asp Asn Asp Asn Ile Phe Leu Ser Pro
100 105 110

Leu Ser Ile Ser Thr Ala Phe Ala Met Thr Lys Leu Gly Ala Cys Asn
115 120 125

Asp Thr Leu Gln Gln Leu Met Glu Val Phe Lys Phe Asp Thr Ile Ser
130 135 140

Glu Lys Thr Ser Asp Gln Ile His Phe Phe Phe Ala Lys Leu Asn Cys
145 150 155 160

Arg Leu Tyr Arg Lys Ala Asn Lys Ser Ser Lys Leu Val Ser Ala Asn
165 170 175

Arg Leu Phe Gly Asp Lys Ser Leu Thr Phe Asn Glu Thr Tyr Gln Asp
180 185 190

Ile Ser Glu Leu Val Tyr Gly Ala Lys Leu Gln Pro Leu Asp Phe Lys
 195 200 205
 Glu Asn Ala Glu Gln Ser Arg Ala Ala Ile Asn Lys Trp Val Ser Asn
 210 215 220
 Lys Thr Glu Gly Arg Ile Thr Asp Val Ile Pro Ser Glu Ala Ile Asn
 225 230 235 240
 Glu Leu Thr Val Leu Val Leu Val Asn Thr Ile Tyr Phe Lys Gly Leu
 245 250 255
 Trp Lys Ser Lys Phe Ser Pro Glu Asn Thr Arg Lys Glu Leu Phe Tyr
 260 265 270
 Lys Ala Asp Gly Glu Ser Cys Ser Ala Ser Met Met Tyr Gln Glu Gly
 275 280 285
 Lys Phe Arg Tyr Arg Arg Val Ala Glu Gly Thr Gln Val Leu Glu Leu
 290 295 300
 Pro Phe Lys Gly Asp Asp Ile Thr Met Val Leu Ile Leu Pro Lys Pro
 305 310 315 320
 Glu Lys Ser Leu Ala Lys Val Glu Lys Glu Leu Thr Pro Glu Val Leu
 325 330 335
 Gln Glu Trp Leu Asp Glu Leu Glu Glu Met Met Leu Val Val His Met
 340 345 350
 Pro Arg Phe Arg Ile Glu Asp Gly Phe Ser Leu Lys Glu Gln Leu Gln
 355 360 365
 Asp Met Gly Leu Val Asp Leu Phe Ser Pro Glu Lys Ser Lys Leu Pro
 370 375 380
 Gly Ile Val Ala Glu Gly Arg Asp Asp Leu Tyr Val Ser Asp Ala Phe
 385 390 395 400
 His Lys Ala Phe Leu Glu Val Asn Glu Glu Gly Ser Glu Ala Ala Ala
 405 410 415
 Ser Thr Ala Val Val Ile Ala Gly Arg Ser Leu Asn Pro Asn Arg Val
 420 425 430
 Thr Phe Lys Ala Asn Arg Pro Phe Leu Val Phe Ile Arg Glu Val Pro
 435 440 445
 Leu Asn Thr Ile Ile Phe Met Gly Arg Val Ala Asn Pro Cys Val Lys
 450 455 460
 <210> 65
 <211> 1962
 <212> DNA
 <213> Homo sapiens
 <400> 65
 atgcgtcccc tgcgcccccg cgccgcgctg ctggcgctcc tggcctcgct cctggccgcg
 60

cccccggtgg ccccggccga ggccccgcac ctggtgcagg tggacgcggc ccgcgcgtg
120

tggccccctgc ggcgttctg gaggagcaca ggcttctgcc ccccgctgcc acacagccag
180

gctgaccagt acgtccctcag ctgggaccag cagctcaacc tcgcctatgt gggcgccgtc
240

cctcaccgog gcatcaagca ggtccggacc cactggctgc tggagcttgt caccaccagg
300

gggtccactg gacggggcct gagctacaac ttcacccacc tggacgggta cttggacctt
360

ctcagggaga accagctcct ccaggggttt gagctgatgg gcagcgcctc gggccacttc
420

actgactttg aggacaagca gcaggtgttt gagtggaagg acttggcttc cagcctggcc
480

aggagataca tcggtaggta cggactggcg catgtttcca agtggaaactt cgagacgtgg
540

aatgagccag accaccacga ctttgacaac gtctccatga ccatgcaagg cttcctgaac
600

tactacgatg cctgctcgga gggctctgcg gccgccagcc ccgccctgcg gctgggaggg
660

ccggcgact ccttccacac cccaccgca tccccgctga gctggggcct cctgcgccac
720

tgccacgacg gtaccaactt cttcactggg gaggcgggcg tgcggctgga ctacatctcc
780

ctccacagga agggtgogcg cagctccatc tccatcctgg agcaggagaa ggtcgtcgcg
840

cagcagatcc ggcagctott cccaagttc gcggacaccc ccatttaca cgcagaggcg
900

gacccgctgg tgggctggtc cctgccacag ccgtggaggg cggacgtgac ctacgcggcc
960

atggtggtga aggtcatcgc gcagcatcag aacctgctac tggccaacac cacctccgcc
1020

ttcccctacg cgtccctgag caacgacaat gccttctga gctaccaccc gcaccccttc
1080

gcgcagcgca cgtccaccgc gcgcttcag gtcaacaaca cccgcccgcc gcacgtgcag
1140

ctgttgcgca agccggtgct cacggccatg gggctgctgg cgtgctgga tgaggagcag
1200

ctctgggccc aagtgtcgca ggccgggacc gtccctggaca gcaaccacac ggtgggcgtc
1260

ctggccagcg cccaccgccc ccagggcccc gccgacgcct ggcgcgccgc ggtgctgac
1320

tacgcgagcg acgacacccg cgccaccccc aaccgcagcg tcgcggtgac cctgcggctg
1380

cgcggggtgc cccccggccc gggcctggtc tacgtcacgc gctacctgga caacgggctc
1440

tgcagccccg acggcgagtg gcggcgccctg ggccggcccc tcttccccac.ggcagagcag
1500

ttccggcgca tgcgcgcggc tgaggacccg gtggccgagg cgccccgccc cttacccgcc
1560

ggcgccgcc tgacctgcg ccccgcgctg cggctgccgt cgcttttctt ggtgcacgtg
1620

tgtgcgcgcc ccgagaagcc gccggggcag gtcacgcggc tccgcgcctt gccctgacc
1680

caagggcagc tggttcttgt ctggctggat gaacacgtgg gctccaagt cctgtggaca
1740

tacgagatcc agttctctca ggacggtaag ggttacacc cggtcagcag gaagccatcg
1800

accttcaacc tctttgtgtt cagcccagac acaggtgctg tctctggctc ctaccgagtt
1860

cgagccctgg actactgggc cagaccaggc ccttctcgg accctgtgcc gtacctggag
1920

gtccctgtgc caagagggcc cccatccccg ggcaatccat ga
1962

<210> 66
<211> 653
<212> PRT
<213> Homo sapiens

<400> 66
Met Arg Pro Leu Arg Pro Arg Ala Ala Leu Leu Ala Leu Leu Ala Ser
1 5 10 15

Leu Leu Ala Ala Pro Pro Val Ala Pro Ala Glu Ala Pro His Leu Val
20 25 30

Gln Val Asp Ala Ala Arg Ala Leu Trp Pro Leu Arg Arg Phe Trp Arg
35 40 45

Ser Thr Gly Phe Cys Pro Pro Leu Pro His Ser Gln Ala Asp Gln Tyr
50 55 60

Val Leu Ser Trp Asp Gln Gln Leu Asn Leu Ala Tyr Val Gly Ala Val
65 70 75 80

Pro His Arg Gly Ile Lys Gln Val Arg Thr His Trp Leu Leu Glu Leu
85 90 95

Val Thr Thr Arg Gly Ser Thr Gly Arg Gly Leu Ser Tyr Asn Phe Thr

	100	105	110
His Leu Asp Gly Tyr Leu Asp Leu Leu Arg Glu Asn Gln Leu Leu Pro	115	120	125
Gly Phe Glu Leu Met Gly Ser Ala Ser Gly His Phe Thr Asp Phe Glu	130	135	140
Asp Lys Gln Gln Val Phe Glu Trp Lys Asp Leu Val Ser Ser Leu Ala	145	150	155
Arg Arg Tyr Ile Gly Arg Tyr Gly Leu Ala His Val Ser Lys Trp Asn	165	170	175
Phe Glu Thr Trp Asn Glu Pro Asp His His Asp Phe Asp Asn Val Ser	180	185	190
Met Thr Met Gln Gly Phe Leu Asn Tyr Tyr Asp Ala Cys Ser Glu Gly	195	200	205
Leu Arg Ala Ala Ser Pro Ala Leu Arg Leu Gly Gly Pro Gly Asp Ser	210	215	220
Phe His Thr Pro Pro Arg Ser Pro Leu Ser Trp Gly Leu Leu Arg His	225	230	235
Cys His Asp Gly Thr Asn Phe Phe Thr Gly Glu Ala Gly Val Arg Leu	245	250	255
Asp Tyr Ile Ser Leu His Arg Lys Gly Ala Arg Ser Ser Ile Ser Ile	260	265	270
Leu Glu Gln Glu Lys Val Val Ala Gln Gln Ile Arg Gln Leu Phe Pro	275	280	285
Lys Phe Ala Asp Thr Pro Ile Tyr Asn Asp Glu Ala Asp Pro Leu Val	290	295	300
Gly Trp Ser Leu Pro Gln Pro Trp Arg Ala Asp Val Thr Tyr Ala Ala	305	310	315
Met Val Val Lys Val Ile Ala Gln His Gln Asn Leu Leu Leu Ala Asn	325	330	335
Thr Thr Ser Ala Phe Pro Tyr Ala Leu Leu Ser Asn Asp Asn Ala Phe	340	345	350
Leu Ser Tyr His Pro His Pro Phe Ala Gln Arg Thr Leu Thr Ala Arg	355	360	365
Phe Gln Val Asn Asn Thr Arg Pro Pro His Val Gln Leu Leu Arg Lys	370	375	380
Pro Val Leu Thr Ala Met Gly Leu Leu Ala Leu Leu Asp Glu Glu Gln	385	390	395
Leu Trp Ala Glu Val Ser Gln Ala Gly Thr Val Leu Asp Ser Asn His	405	410	415
Thr Val Gly Val Leu Ala Ser Ala His Arg Pro Gln Gly Pro Ala Asp	420	425	430

Ala Trp Arg Ala Ala Val Leu Ile Tyr Ala Ser Asp Asp Thr Arg Ala
435 440 445

His Pro Asn Arg Ser Val Ala Val Thr Leu Arg Leu Arg Gly Val Pro
450 455 460

Pro Gly Pro Gly Leu Val Tyr Val Thr Arg Tyr Leu Asp Asn Gly Leu
465 470 475 480

Cys Ser Pro Asp Gly Glu Trp Arg Arg Leu Gly Arg Pro Val Phe Pro
485 490 495

Thr Ala Glu Gln Phe Arg Arg Met Arg Ala Ala Glu Asp Pro Val Ala
500 505 510

Ala Ala Pro Arg Pro Leu Pro Ala Gly Gly Arg Leu Thr Leu Arg Pro
515 520 525

Ala Leu Arg Leu Pro Ser Leu Leu Leu Val His Val Cys Ala Arg Pro
530 535 540

Glu Lys Pro Pro Gly Gln Val Thr Arg Leu Arg Ala Leu Pro Leu Thr
545 550 555 560

Gln Gly Gln Leu Val Leu Val Trp Ser Asp Glu His Val Gly Ser Lys
565 570 575

Cys Leu Trp Thr Tyr Glu Ile Gln Phe Ser Gln Asp Gly Lys Ala Tyr
580 585 590

Thr Pro Val Ser Arg Lys Pro Ser Thr Phe Asn Leu Phe Val Phe Ser
595 600 605

Pro Asp Thr Gly Ala Val Ser Gly Ser Tyr Arg Val Arg Ala Leu Asp
610 615 620

Tyr Trp Ala Arg Pro Gly Pro Phe Ser Asp Pro Val Pro Tyr Leu Glu
625 630 635 640

Val Pro Val Pro Arg Gly Pro Pro Ser Pro Gly Asn Pro
645 650

<210> 67

<211> 1290

<212> DNA

<213> Homo sapiens

<400> 67

atgcagctga ggaaccacaga actacatctg ggctgcgcgc ttgcgcttcg cttcctggcc
60

ctcgtttcct gggacatccc tggggctaga gcactggaca atggattggc aaggacgcct
120

accatgggct ggctgcaactg ggagcgcttc atgtgcaacc ttgactgcc aagaagacca
180

gattcctgca tcagtgagaa gctcttcacg gagatggcag agctcatggt ctcagaaggc
240

tggaaggatg cagggttatga gtacctctgc attgatgact gttggatggc tccccaaaga
300

gattcagaag gcagacttca ggcagaccct cagcgctttc ctcatgggat tgcgcagcta
360

gctaattatg ttcacagcaa aggactgaag ctagggattt atgcagatgt tggaaataaa
420

acctgogcag gcttccctgg gagttttgga tactacgaca ttgatgccca gacctttgct
480

gactggggag tagatctgct aaaatttgat ggttggtact gtgacagttt ggaaaatttg
540

gcagatgggtt. ataagcacat gtccttggcc ctgaatagga ctggcagaag cattgtgtac
600

tcctgtgagt ggcctcttta tatgtggccc tttcaaaagc ccaattatac agaaatccga
660

cagtactgca atcactggcg aaattttgct gacattgatg attcctggaa aagtataaag
720

agtatcttgg actggacatc ttttaaccag gagagaattg ttgatgttgc tggaccaggg
780

ggttggaatg acccagatat gttagtgatt ggcaactttg gcctcagctg gaatcagcaa
840

gtaactcaga tggccctctg ggctatcatg gctgctcctt tattcatgtc taatgacctc
900

cgacacatca gccctcaagc caaagctctc cttcaggata aggacgtaat tgccatcaat
960

caggacccct tgggcaagca agggtagcag cttagacagg gagacaactt tgaagtgtgg
1020

gaaagacctc tctcaggctt agcctgggct gtagctatga taaaccggca ggagattggt
1080

ggacctcgtc cttataccat cgcagttgct tccctgggta aaggagtggc ctgtaatcct
1140

gcctgcttca tcacacagct cctccctgtg aaaaggaagc tagggttcta tgaatggact
1200

tcaagggttaa gaagtcacat aaatcccaca ggcactgttt tgcttcagct agaaaataca
1260

atgcagatgt cattaataaga cttactttta
1290

<210> 68

<211> 429

<212> PRT

<213> Homo sapiens

<400> 68

Met Gln Leu Arg Asn Pro Glu Leu His Leu Gly Cys Ala Leu Ala Leu

Phe Glu Val Trp Glu Arg Pro Leu Ser Gly Leu Ala Trp Ala Val Ala
 340 345 350

Met Ile Asn Arg Gln Glu Ile Gly Gly Pro Arg Ser Tyr Thr Ile Ala
 355 360 365

Val Ala Ser Leu Gly Lys Gly Val Ala Cys Asn Pro Ala Cys Phe Ile
 370 375 380

Thr Gln Leu Leu Pro Val Lys Arg Lys Leu Gly Phe Tyr Glu Trp Thr
 385 390 395 400

Ser Arg Leu Arg Ser His Ile Asn Pro Thr Gly Thr Val Leu Leu Gln
 405 410 415

Leu Glu Asn Thr Met Gln Met Ser Leu Lys Asp Leu Leu
 420 425

<210> 69

<211> 351

<212> DNA

<213> Homo sapiens

<400> 69

atggattact acagaaaata tgcagctatc tttctgggtca cattgtcggg gtttctgcat
 60

gttctccatt cgcctcctga tgtgcaggat tgcccagaat gcacgctaca ggaaaaccca
 120

ttcttctccc agccgggtgc cccaatactt cagtgcattg gctgctgctt ctctagagca
 180

tatcccactc cactaagggtc caagaagacg atgttggtcc aaaagaacgt cacctcagag
 240

tccacttgct gtgtagctaa atcatataac agggtcacag taatgggggg tttcaaagtg
 300

gagaaccaca cggcgtgcc a ctgcagtact tgttattatc acaaatttta a
 351

<210> 70

<211> 116

<212> PRT

<213> Homo sapiens

<400> 70

Met Asp Tyr Tyr Arg Lys Tyr Ala Ala Ile Phe Leu Val Thr Leu Ser
 1 5 10 15

Val Phe Leu His Val Leu His Ser Ala Pro Asp Val Gln Asp Cys Pro
 20 25 30

Glu Cys Thr Leu Gln Glu Asn Pro Phe Phe Ser Gln Pro Gly Ala Pro
 35 40 45

Ile Leu Gln Cys Met Gly Cys Cys Phe Ser Arg Ala Tyr Pro Thr Pro
 50 55 60

Leu Arg Ser Lys Lys Thr Met Leu Val Gln Lys Asn Val Thr Ser Glu
65 70 75 80

Ser Thr Cys Cys Val Ala Lys Ser Tyr Asn Arg Val Thr Val Met Gly
85 90 95

Gly Phe Lys Val Glu Asn His Thr Ala Cys His Cys Ser Thr Cys Tyr
100 105 110

Tyr His Lys Ser
115

<210> 71
<211> 498
<212> DNA
<213> Homo sapiens

<400> 71
atggagatgt tccaggggct gctgctgttg ctgctgctga gcatgggcgg gacatgggca
60

tccaaggagc cgcttcggcc acggtgccgc cccatcaatg ccaccctggc tgtggagaag
120

gagggctgcc ccgtgtgcat caccgtcaac accaccatct gtgccggcta ctgcccacc
180

atgaccgcg tgctgcagg ggtcctgccg gccctgcctc aggtgggtgtg caactaccgc
240

gatgtgcgt tgcagtcct cccgctccct ggctgcccgc gcggcgtgaa ccccggtgtc
300

tcctacgccg tggtctcag ctgtcaatgt gcaactctgcc gccgcagcac cactgactgc
360

gggggtccca aggaccacc cttgacctgt gatgaccccc gcttccagga ctctcttcc
420

tcaaaggccc ctccccccag ccttccaagc ccatcccgac tcccggggcc ctcgacacc
480

ccgatacctcc cacaataa
498

<210> 72
<211> 165
<212> PRT
<213> Homo sapiens

<400> 72
Met Glu Met Phe Gln Gly Leu Leu Leu Leu Leu Leu Ser Met Gly
1 5 10 15

Gly Thr Trp Ala Ser Lys Glu Pro Leu Arg Pro Arg Cys Arg Pro Ile
20 25 30

Asn Ala Thr Leu Ala Val Glu Lys Glu Gly Cys Pro Val Cys Ile Thr
35 40 45

Val Asn Thr Thr Ile Cys Ala Gly Tyr Cys Pro Thr Met Thr Arg Val

50

55

60

Leu Gln Gly Val Leu Pro Ala Leu Pro Gln Val Val Cys Asn Tyr Arg
65 70 75 80

Asp Val Arg Phe Glu Ser Ile Arg Leu Pro Gly Cys Pro Arg Gly Val
85 90 95

Asn Pro Val Val Ser Tyr Ala Val Ala Leu Ser Cys Gln Cys Ala Leu
100 105 110

Cys Arg Arg Ser Thr Thr Asp Cys Gly Gly Pro Lys Asp His Pro Leu
115 120 125

Thr Cys Asp Asp Pro Arg Phe Gln Asp Ser Ser Ser Ser Lys Ala Pro
130 135 140

Pro Pro Ser Leu Pro Ser Pro Ser Arg Leu Pro Gly Pro Ser Asp Thr
145 150 155 160

Pro Ile Leu Pro Gln
165

<210> 73

<211> 165

<212> PRT

<213> Homo sapiens

<400> 73

Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu
1 5 10 15

Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His
20 25 30

Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe
35 40 45

Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp
50 55 60

Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu
65 70 75 80

Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp
85 90 95

Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu
100 105 110

Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala
115 120 125

Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val
130 135 140

Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala
145 150 155 160

Cys Arg Thr Gly Asp
165

<210> 74
 <211> 588
 <212> DNA
 <213> Homo sapiens

<400> 74
 atggccctcc tgttccctct actggcagcc ctagtgatga ccagctatag ccctgttgga
 60
 tctctgggct gtgatctgcc tcagaacctat ggcctactta gcaggaacac cttgggtgctt
 120
 ctgcacaaaa tgaggagaat ctcccccttc ttgtgtctca aggacagaag agacttcagg
 180
 ttccccccagg agatggtaaa agggagccag ttgcagaagg cccatgtcat gtctgtcctc
 240
 catgagatgc tgcagcagat cttcagcctc ttccacacag agcgctcctc tgctgcctgg
 300
 aacatgaccc tcctagacca actccacact ggacttcacg agcaactgca acacctggag
 360
 acctgcttgc tgcaggtagt gggagaagga gaatctgctg gggcaattag cagccctgca
 420
 ctgaccttga ggaggtactt ccagggaatc cgtgtctacc tgaaagagaa gaaatacagc
 480
 gactgtgcct gggaagttgt cagaatggaa atcatgaaat ccttggttctt atcaacaaac
 540
 atgcaagaaa gactgagaag taaagataga gacctgggct catcttga
 588

<210> 75
 <211> 195
 <212> PRT
 <213> Homo sapiens

<400> 75
 Met Ala Leu Leu Phe Pro Leu Leu Ala Ala Leu Val Met Thr Ser Tyr
 1 5 10 15
 Ser Pro Val Gly Ser Leu Gly Cys Asp Leu Pro Gln Asn His Gly Leu
 20 25 30
 Leu Ser Arg Asn Thr Leu Val Leu Leu His Gln Met Arg Arg Ile Ser
 35 40 45
 Pro Phe Leu Cys Leu Lys Asp Arg Arg Asp Phe Arg Phe Pro Gln Glu
 50 55 60
 Met Val Lys Gly Ser Gln Leu Gln Lys Ala His Val Met Ser Val Leu
 65 70 75 80
 His Glu Met Leu Gln Gln Ile Phe Ser Leu Phe His Thr Glu Arg Ser
 85 90 95

Ser Ala Ala Trp Asn Met Thr Leu Leu Asp Gln Leu His Thr Gly Leu
 100 105 110
 His Gln Gln Leu Gln His Leu Glu Thr Cys Leu Leu Gln Val Val Gly
 115 120 125
 Glu Gly Glu Ser Ala Gly Ala Ile Ser Ser Pro Ala Leu Thr Leu Arg
 130 135 140
 Arg Tyr Phe Gln Gly Ile Arg Val Tyr Leu Lys Glu Lys Lys Tyr Ser
 145 150 155 160
 Asp Cys Ala Trp Glu Val Val Arg Met Glu Ile Met Lys Ser Leu Phe
 165 170 175
 Leu Ser Thr Asn Met Gln Glu Arg Leu Arg Ser Lys Asp Arg Asp Leu
 180 185 190
 Gly Ser Ser
 195

1996240.1